Railway Age

With which are incorporated the Railway Review, the Railway Gazette, and the Railway-Age Gazette. Name registered in U. S. Patent Office.

Vol. 123 — November 22, 1947 — No. 21

PUBLISHED EACH SATURDAY BY THE SIMMONS-BOARDMAN PUBLISHING CORPORATION, 1309 NOBLE STREET, PHILADELPHIA 23, PA., WITH EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y., AND 105 W. ADAMS STREET, CHICAGO 3, ILL.

WASHINGTON 4, D. C.: 1081 NATIONAL PRESS BUILDING—CLEVELAND 13, TERMINAL TOWER—SEATTLE 1: 1033 HENRY BUILDING—SAN FRANCISCO 4: 100 MONTGOMERY STREET, ROOMS 805-806—LOS ANGELES 14: 530 WEST 6th STREET—DALLAS 4: 2909 MAPLE AVENUE.

SAMUEL O. DUNN, CHAIRMAN. JAMES G. LYNE, VICE-PRESIDENT—ASSISTANT TO CHAIRMAN. HENRY LEE, PRESIDENT. ROY V. WRIGHT, VICE-PRESIDENT AND SECRETARY. C. MILES BURPEE, F. H. THOMPSON, F. C. KOCH, R. E. THAYER, H. E. McCANDLESS, S. WAYNE HICKEY, VICE-PRESIDENTS. J. T. DeMOTT, TREASURER. RALPH E. WESTERMAN, ARTHUR J. McGINNIS, ASSISTANT TREASURERS.

SAMUEL O. DUNN AND JAMES G. LYNE, EDITORS. ROY V. WRIGHT, MANAGING EDITOR. C. B. TAVENNER, ASS'T MANAGING EDITOR. NEAL D. HOWARD, WESTERN EDITOR. C. B. PECK, ALFRED G. OEHLER, E. L. WOODWARD, J. H. DUNN, H. C. WILCOX, CHARLES LAYNG, WALTER J. TAFT, M. H. DICK, W. H. SCHMIDT, Jr., C. L. COMBES, MAURICE PEACOCK, SHERMAN DAVIS, FRED C. MILES, WALTER L. TURNER, Jr., C. J. WEIHOFEN, GEORGE JOHNSON, HENRY E. MICHAEL, ROBERT G. LEWIS, JOHN W. MILLIKEN. LIBRARIAN: EDITH C. STONE. EDITORIAL ASSISTANT: ELAINE C. FARRAR.

C. MILES BURPEE, BUSINESS MANAGER.

SUBSCRIPTIONS INCLUDING 52 REGULAR WEEKLY ISSUES, AND SPECIAL DAILY EDITIONS PUBLISHED FROM TIME TO TIME IN NEW YORK OR IN PLACES OTHER THAN NEW YORK, PAYABLE IN ADVANCE AND POSTAGE FREE. UNITED STATES, U. S. POSSESSIONS AND CANADA: 1 YEAR, $6.00; 2 YEARS, $10.00; OTHER COUNTRIES NOT INCLUDING DAILY EDITIONS: IN WESTERN HEMISPHERE 1 YEAR $10.00; 2 YEARS $16.00; OTHER COUNTRIES 1 YEAR $15.00; 2 YEARS $25.00. SINGLE COPIES, 50 CENTS EACH. H. E. McCANDLESS, CIRCULATION MANAGER, 30 CHURCH STREET, NEW YORK 7.

In This Issue

Page

C. T. C. Down by the Ohio ***33***

New 137-mile installation on the Louisville & Nashville cuts 1½ to 2 hours from freight running time.

River "Takes Siding" for N. Y. C. "Twentieth Century" Parade ***38***

Major line change, eliminating 7-deg. 24-min. Gulf curve, required carving a new river channel.

EDITORIALS

National Defense — Everybody's Top Priority 25
Need for Up-to-Date Car Maintenance Facilities 26
A Severe Car Shortage 27
Wanted — an Educational Campaign Against Waste 27

GENERAL ARTICLES

Rock Island Exhibits Newly Delivered Passenger Cars 28
Securities of Reorganized Roads Selling Far Below Par 31
C. T. C. Down by the Ohio 33
Accessories on New Passenger Cars, by J. Gogerty 36
River "Takes Siding" for N. Y. C. "Twentieth Century" Parade 38
Need for Speedier Hearings Told by Commissioner Aitchison 42
Brazil Adds Diesels to Its Electrics, by E. M. Bill 43
Advises I. C. C. to Keep Santa Fe Out of St. Louis 46

NEW DEVICE **35**
NEW BOOK **37**
COMMUNICATIONS **48**
GENERAL NEWS **49**
WITH THE GOVERNMENT AGENCIES **54**
REVENUES AND EXPENSES **64**
FREIGHT OPERATING STATISTICS **74**

Railway Age is a member of Associated Business Papers (A. B. P.) and Audit Bureau of Circulation (A. B. C.), and is indexed by the Industrial Arts Index and by the Engineering Index Service.

★

PRINTED IN U. S. A.

Here's Interlocking that Saves while it Serves...

At Denver, the "Burlington's" 38th Street Interlocking convincingly demonstrates the advantages of Unit-lever Relay Interlocking. Adjacent to the big Denver classification yard, and in the vicinity of numerous packing plants and refineries, this interlocking handles all mainline movements, routes trains to and from the classification yard, and also protects switching movements of another road which crosses the Burlington at that point.

The compactness of the Unit-lever machine permitted installing it in a small space in the yard office. Its simplicity of operation and speed of route establishment are aided by miniature levers which control switches and signals, plus an integral track model which indicates track occupancy.

There are probably similar locations on your railroad where "Union" Unit-lever Relay Interlocking can eliminate delays and improve traffic conditions economically and profitably. May we discuss its possibilities with you?

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

OPS SPLIT ON WAGES: Mr. Whitney's trainmen and the conductors have reached an agreement with the railroads for a 15½-cents-an-hour wage increase and certain rules changes, leaving a few more rules modifications for further negotiation. The heads of the other three op unions, however, appear to be taking a "tough" attitude; anyhow, they have refused so far to go along with this arrangement, and their members will have a chance to vote for a strike, according to press-time information included in this issue's news pages.

●

BRAZIL'S DIESELS: Narrow-gage Diesel-electric locomotives are being built by General Electric for main-line service on state-owned Brazilian railroads. They are described in this issue in an article that explains the conditions under which they will be used and the design and structural details that have been worked out to meet these conditions. Each locomotive delivers about 480 hp. at the wheel rims at normal operating speeds, and they are arranged for convenient operation in pairs when desired.

●

MOVING THE MOHAWK: The Gulf curve, long a bottleneck in the New York Central's main line at Little Falls, N. Y., is no more, as the result of a $2½-million line-straightening project put in service this week. One of our illustrated articles gives the whole story of this major undertaking, the principal feature of which was the diversion of the Mohawk river into a new channel to make room for the realinement.

●

PRICED BELOW PAR: The I. C. C.'s statisticians have just come up with some figures that may be referred to when the merits of railroad reorganization plans are under discussion. These data, which appear in the current "Monthly Comment," are digested in one of this week's articles (page 31). They indicate the investment market's appraisal of the bonds and stocks of several roads that have recently emerged from trusteeship. This appraisal, on the average, shows a vast gulf between the par or stated value of these new commission-approved securities and their present cash rating on the exchanges, a difference especially evident with respect to equity issues.

●

SETBACK FOR THE SANTA FE: The proposed report which the Interstate Commerce Commission has made public in the proceedings growing out of the plan of the Santa Fe to acquire direct entry into St. Louis recommends (as our review of it on page 46 explains) that authority to consummate the arrangement be denied. In a general way the arguments of the objecting railroads are upheld in this report, its tenor being that there is already as much competition between railroads for the St. Louis-Kansas City business as the public interest requires, that the Santa Fe and the Burlington (which would participate in the arrangement) are doing very well now, and that the competing lines can't afford the risk of impaired revenues, even though some of them have just been through the section 77 wringer. Division 4 of the commission, of course, may or may not accept this recommendation.

●

AN ARM OF DEFENSE: Whether or not the public understands the indispensable role of the railroads in the national defense set-up—and there is fairly good evidence that the public generally has only the faintest conception of their importance—the railroads know how essential their most efficient performance is in time of national need to the mobilization and maintenance of the other arms of defense—the fighting forces on land and sea and in the air and the mills and mines and laboratories and farms that sustain them.

●

HORN-TOOTING TIME: So far as their resources permit, the railroads are constantly bettering the facilities with which they must be ready to perform their part in the swift and sure concentration of national might whenever the need for it arises. But there is no sound reason, our leading editorial points out, why it is necessary—or desirable—for the railroads to be bashful and mute about their importance to the successful accomplishment of every major defense operation. They can—and in their own interest and the national interest they should—see that every literate person knows what their actions and their plans are in this respect. In so doing, public interest ought to be aroused—ought to arise spontaneously, in fact—to secure the effective administration of a national policy toward transportation which would assure the development and maintenance of railroad plant capacity fully adequate to meet any demands that future national necessities may make upon it.

●

DELAYS DIMINISHED: The installation of centralized traffic control on 137 miles of single track between Louisville, Ky., and Henderson has enabled the Louisville & Nashville to get its through tonnage freights over that subdivision in 1½ to 2 hours less time than the old timetable and train order method of operation required. An illustrated description of the project appears in this issue.

●

BRIEFLY NOTED: The Shippers Boards were 1.6 per cent low in their advance estimates of this year's second-quarter loadings. . . . Success is reported in the application of radar on tugboats in New York harbor. . . . In a committee study, the U. S. Chamber of Commerce favorably appraises the railroads' freight-rate increase proposals. . . . The Federal Trade Commission continues to look askance at basing-point pricing procedures. . . . With respect to the Rock Island reorganization, the Supreme Court says "No review" means "No review." . . . President Charles W. Brown of the Western Maryland plans to retire at the end of the year. . . . The commission isn't too keen about the Pennsylvania's plans to shake off some of the trucking activities it engages in through affiliates.

ROCK ISLAND CARS: Brief illustrated descriptions appear herein (page 28) of nine streamliner cars recently delivered to the Rock Island by Pullman-Standard, pricipally for "Golden State" and "Rocket" service. Particularly gay and different are the coffee-shop-lounge car and full dining car assigned to the Chicago-Los Angeles run. Some new ideas in air conditioning and ventilation have been applied, too.

●

MORE TO COME: The improvements in the art of car building which these Rock Island cars embody are examples of the advances in the design of specialties and accessories now available. But the Union Pacific's General Superintendent of Motive Power Gogerty, after outlining many of these developments in a recent paper (which we publish this week), expresses the fear that some of these advances will have become passé before all the cars on order are actually on the rails—a tribute to the research departments of the builders if not to the producers of the materials they use.

●

MEASURED IN MILLIONS: Several items in this week's news reflect the railroads' confidence in their future. The Union Pacific has just placed orders for $34 million worth of locomotives and cars, in addition to its earlier commitments. This road is acquiring 1,900 more freight cars and 181 more Diesel units, of which 25 are switchers and the rest are road or road-switcher types. Along with this announcement appears R. B. White's statement that the B. & O.'s needs in the next few years will call for an outlay by it of a quarter of a billion dollars in capital, and J. M. Symes' declaration that the Pennsylvania, after a spell of deficit reporting, has turned the corner, with $100 million of deferred maintenance to be made up.

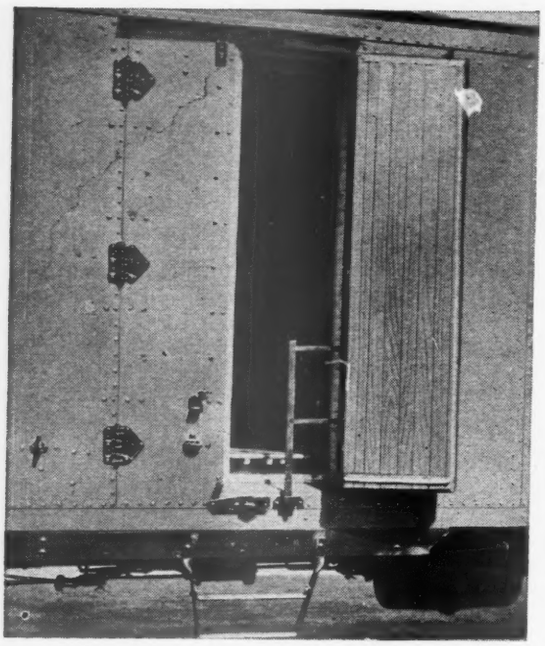
●

A WAY TO GET ACTION: Chairman Aitchison recently reminded a group of Interstate Commerce Commission practitioners that they can do a great deal to help it get out from under a deluge of verbiage that seriously retards its functioning and makes more difficult its arrival at the essential facts on which to base sound decisions. As noted on page 42, he observed that the commission has a lot of matters coming before it of the greatest importance to the parties involved and to the country, a speedy disposition of which is urgently required. His plea is for brief, factual presentations and simple, direct action, in place of police-court legal tactics of delay and obfuscation and red-herring drawing—in the practice of which, incidentally, some of the lawyers on the public payroll are particularly adept.

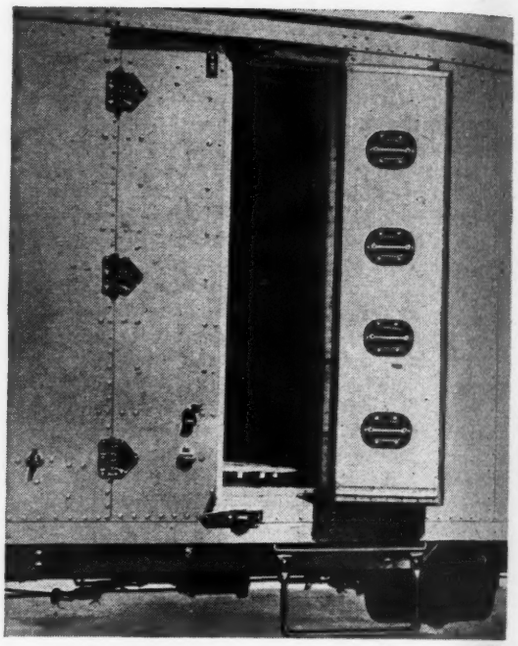
●

GROSS LOOKS BETTER: Operating revenues in October were 10 per cent or so better than a year ago, the A. A. R. estimates. The improvement is entirely in receipts from freight operations, as passenger revenues were about 17 per cent under October, 1946. But they don't pay dividends out of gross.

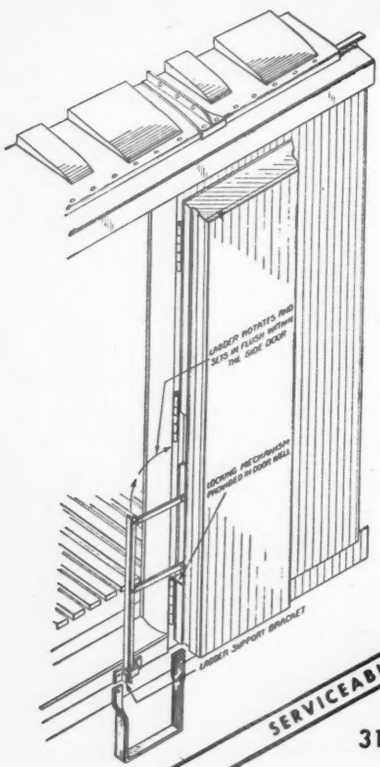
"Standard" Safety Side Door Ladders



Type "T"



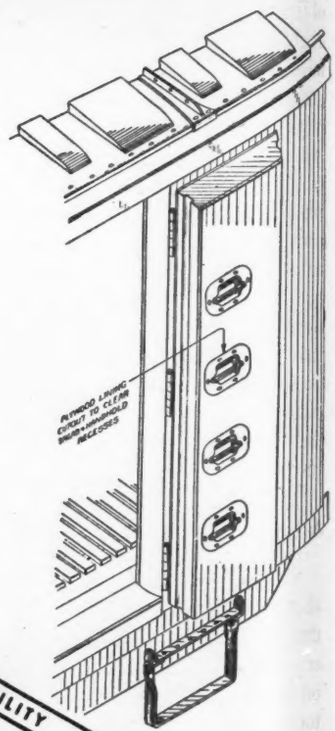
TYPE "S"



Either of these ladders provide a

- SIMPLE
- FOOLPROOF
- SAFE

means of entrance into loaded or empty cars.



SERVICEABILITY RELIABILITY ENDURABILITY

STANDARD RAILWAY EQUIPMENT CO.

310 South Michigan Avenue, Chicago 4, Ill. — 247 Park Avenue, New York 17, N. Y.

PLANTS — Hammond, Ind. — New Kensington, Pa.

RAILWAY AGE

National Defense—Everybody's Top Priority

National defense is the country's most important business, because no other business, public or private, can function, let alone thrive, unless its operations are protected from hostile attack. The railroads are especially concerned with defense, not just because, like every other business, they need protection, but especially because they are themselves an integral part of the military mechanism—just as necessary to thwarting enemy attack as soldiers, sailors, munitions and planes.

The general public, and the government itself, are quite evidently only dimly aware of this dependence of theirs upon the railroads in a time of national peril—doubtless because, so far, the railroads have never failed them. The wheel which doesn't squeak gets no grease. Witness, for example, the government's promotional zeal for all forms of transportation except the railroads. The President has named two civilian boards of able and public-spirited men—one to study and report on the nation's need for a modernized merchant marine, and another to make a similar inquiry to determine national policy for the maintenance of our air power. The protagonists of highway development—with the collaboration of the federal agencies which have the pleasant assignment of pouring out the taxpayers' money on highway construction—raise a continuously successful clamor for the construction of "super" highways, with national defense alleged as a justification.

A Basic National Resource

Voices are, however, seldom raised—at least not above a whisper—to remind our fellow-countrymen that an adequate supply of planes or ships or munitions or even food cannot be maintained unless railroads are on hand to move raw materials and fuel into the factories; finished parts to final assembly; and completed products to the point of consumption. Without railroad service the workers in the mines and mills could not be fed, clothed or housed. In time of military peril, the whole nation is integrated by the railroads into one huge industrial plant to produce the weapons and machines which, so far, have made it invincible. Failing this integration of production which the railroads alone can provide, the nation would not only be unable to defend itself—it would crumble from starvation without the enemy's having to sabotage a single plant or drop a single bomb.

The public and the government may be faintly cognizant of the truth of such assertions, but they certainly do not have the lively realization of them requisite to action—else vigorous official steps would be in progress toward determining the public policies necessary to a thriving and modern railroad industry, similar to the official efforts being put forth to provide a "climate" in which ship and plane production will go forward.

Railroad Plant Is Inadequate

The railroads, unlike some of their neighbors in the transportation business, do not seek or need a crutch of "federal aid" with which to support themselves in an upright position—provided only that arbitrary restraints on their initiative and self-reliance be discontinued. It is not necessary to repeat to readers of this paper such familiar figures as the $6 billion of increased investment in railroad property during the 1920's, derived entirely from private sources, without which expenditures the railroads could not possibly have performed their recent colossal feats of wartime transportation. The additions to facilities in the 1920's were encouraged and made possible by favorable railroad earnings in that decade.

Meantime, even a casual onlooker can recognize that railroad plant and equipment, today, are inadequate to peacetime demands. No strain is placed on the most modest gift of reason to proceed from that observation to the conclusion that a renewal of hostilities, with stepped-up production of rapidly growing industrial plant, would swamp the railroads with their present plant and equipment. It follows inevitably that national safety—perhaps even national existence—calls now and calls imperatively for a sustained program of railroad

improvements and additions, of a magnitude relatively comparable to that of the 1920's, but, of course, much larger in dollar volume.

The railways of Britain, in seeking public support of their legitimate needs, relied upon the unfortunate assumption that there exists an acute sense of justice among the mass of citizenry. They asked for a "square deal." They are now in process of socialization. The American railways have, lately, grounded their claim to public understanding on the people's own desire for ample and convenient transportation service. This approach is factual and effective, and should undoubtedly be pressed forward. And yet—what portion of the total population are able to recognize a shortage of freight transportation when they actually experience it? The shortage of goods on the merchants' shelves is the general public's only contact with a transportation shortage, and there are several possible explanations, besides the right one, for that condition. If, however, adequate railroad service were popularly interpreted, as it honestly can be, in terms of the citizen's desire not to have a hostile plane flying over his home—that is language that anybody at all can understand.

The Lord helps those who help themselves—and the public is inclined to do likewise. The better each railroad orders its own affairs in the light of its resources, the better armed it will be for national defense in the event of conflict—but no harm would be done to draw public attention to this fact, which may not be obvious to everybody. In order to arouse popular interest in a national policy toward transportation which would assure the provision of railroad service adequate to national defense, an effective and desirable first step would appear to be for the railroads to make more widely known their plans and action already undertaken to this end. There are, in addition, some steps they could take but have not yet taken—or at least not as conspicuously as might be profitable—toward the goal of defense, and which would not require large immediate outlays. For example: Publicized studies of prospective fuel and equipment needs and supplies in the event of armed conflict, and of desirable development of alternative routes if existing routes of high traffic concentration should be blocked.

Such studies as these—in addition to introducing the public to the aspect of the railroads' situation of potentially most widespread popular interest—might produce some interesting by-products. To mention only two of them: Greater appreciation of the railroads' deserts as "claimants" for scarce materials, in peace as well as in war; and the diversion to more useful occupation of some of the acute speculative minds which now take their pleasure in concocting quixotic schemes for wholesale consolidation.

The morale of a small group of men or of a large nation (if it is a free nation) depends in no small measure on agreement as to the ends for which all labor. Ideals in an open society like ours represent goals toward which men and women may move by concerted action. They never can be reached in practice—almost by definition—but we can readily recognize whether we are moving toward them or retreating. Our American ideals in part correspond to the goals of all democracies, in part they represent a special contribution to the world. If we are to survive we must make these ideals explicit by our actions; words alone will not suffice.
—James B. Conant, president of Harvard University

Need for Up-to-Date Car Maintenance Facilities

A number of points made by K. F. Nystrom, chief mechanical officer of the Chicago, Milwaukee, St. Paul & Pacific, in addressing the annual meeting of the Car Department Officers' Association at Chicago in September, seem worthy of special emphasis because of the need for keeping railway car equipment and maintenance practices "in tune with the times." Mr. Nystrom called attention to the wide disparity in conditions between the early years of this century when a railroad laborer was paid $1 *a day* and present times when he gets $1 *an hour*. In 1900, a box car could be bought for $600 and a passenger coach for $8,000, while corresponding prices in 1947, he said, are about $5,200 and $100,000, respectively.

With a few notable exceptions, present railway car shops and repair tracks were built four or five decades ago when labor was cheap and there was not so much incentive to install labor-saving devices and shop equipment. Shop buildings were generally low brick structures with small windows and inadequate ventilation, heat, light and sanitation, by modern standards. Moreover, the increase in size and weight of cars, as well as present improved repair and assembly methods, could not be anticipated, so the old car repair facilities are in many instances outgrown and are a major hindrance to efficient operation. A number of new car shops, built, some of them, within the past two years, show what can be done to improve conditions.

Possibly even more important, in the aggregate, is the improvement which may be made in freight-car repair tracks and coach yards, because there are so many more of these smaller running-repair facilities which are also obsolete and outgrown, with resultant high unit repair costs, not to mention irritating delays in the return of equipment to revenue-earning service. Here again, a number of up-to-date repair tracks have been installed with revised layouts for the more efficient handling of freight cars, convenient and adequate service buildings, flood lights for night operation, generous supply of electric-welding and air outlets, efficient power jacking devices, motorized lift and material-handling trucks and hard-surface roadways on which this equipment can operate. These new facilities have earned large returns on the money invested in them.

As for coach yards, the same general opportunity for improvement exists and, in addition, provision is needed to service and make running repairs to vastly more complicated cars, so far as mechanical and electrical equipment are concerned. The latest and best specialized inspection and servicing tools available are obviously required for satisfactory results with modern

roller-bearing high-speed trucks, thermostatically controlled air-conditioning and heating equipment, more or less complicated light and power generating systems, high-speed brakes, anti-wheel-slide devices and other modern features.

The recommendations of competent and forward-looking car men for improved maintenance facilities deserve the earnest consideration of railway managements, for car departments, as a whole, spend about 6 per cent of railroad revenue for equipment repairs alone and 10 to 12 per cent, when other maintenance accounts, and depreciation and retirement, are included.

A Severe Car Shortage

During the four consecutive weeks of highest carloadings in October 3,808,000 cars were loaded with revenue freight, some 113,000 more than were loaded during the four highest consecutive weeks in the fall of 1946. This three per cent increase in fall four-week peak carloadings, however, was accompanied by shortages running up to 41,000 cars during the week ended October 18 and averaging during the period about 4,500 cars a week higher than in 1946. Even though the consequences of this failure to meet the demands of industry and the public for transportation have caused no immediately calamitous situation, it nonetheless represents a serious brake on production. This is particularly true of the shortages of open-top cars on which the nation depends for the movement of a large part of its fuel and at a time when export fuel is so desperately needed in Europe.

It will be recalled that the Office of Defense Transportation announced the promise from the steel industry of sufficient steel to build up the output of freight cars to the 10,000-a-month quota beginning with July rollings and continuing for two months through September, allowing two months' lead time between steel production and delivery of the cars, because the builders' schedules indicated a decline after October from the 10,000-car level. On April 1, about the time this announcement was made, the backlog of orders was reported as 94,947. On November 1 it had increased to 122,463. The total deliveries during the first ten months were less than 50,000 cars.

In its report to President Truman dealing with the limits within which the United States should extend aid to Europe, the group of citizens headed by Secretary of Commerce Averell Harriman proposed that the freight-car construction target be raised to 14,000 cars per month and recommended the allocation of steel if adequate supplies cannot be delivered under voluntary arrangements.

It is certain that the 10,000-a-month objective, which has not yet been attained, is inadequate to restore the freight-car inventory to a healthy condition within a reasonable time. While it exceeds retirements at the rate prevailing during the current year by 4,000 or more cars a month, that rate is too low considering the accumulation of obsolescence and deferred maintenance inherited from the war years.

Wanted—an Educational Campaign Against Waste

Recently, a retired maintenance-of-way officer, speaking of present high wage rates among the track forces, said that it now costs the railroads five cents every time a track laborer lights his pipe. Whether this statement is strictly accurate or not is beside the point.

The important thing is that it gives unmistakable expression to the fact that lost minutes today, from whatever cause, are more costly than ever before, and that, when large gangs are involved, the economic losses can run rapidly into larger figures.

This situation needs translation into homely terms which promote understanding and action—because present wage and price levels make attention to economy more imperative than ever. Still, avoidable waste continues, with what seems to be unusual callousness on the part of some employees, and with less concerted effort to minimize it than for a long time in the past.

Loss of productive man-hours through inadequate planning, inefficient organizations, misdirected individual efforts, and lack of full cooperation between departments, is one of the greatest sources of waste on the railroads. Some loss from these causes is inevitable, but that is all the more reason for special effort to reduce it to the fullest extent possible.

Every piece of material damaged, lost or carelessly disregarded involves waste which, at present prices, is greater than for many years in the past. Many workmen who will straighten bent nails in their home workshops and save every item of scrap appear to be increasingly careless about company property.

Recently, track materials were observed so carelessly distributed along a section of track that many of them were certain to be lost. Surely those responsible for this distribution could not have known that every rail anchor today costs 21 to 24 cents, that track bolts cost 19 cents each—more than double the cost in 1936—and that the loss of even a track spike is four cents thrown away. A department head of a large railroad remarked not long ago that the men in a gang working on the deck of a large steel viaduct on his road had, in a period of only five weeks, dropped a total of about $1,000 worth of tools into a swamp beneath the bridge, where there was no possibility of recovery.

What appears to be needed is a revival in some form of "waste avoidance campaigns"—a concerted effort at education among the personnel who can correct these conditions. The Roadmasters' Association is awake to this need, as is indicated by the fact that one of the subjects chosen for study during the ensuing year is entitled "Educating Track Employees in the Cost of Materials, Tools and Equipment." The committee examining this subject will doubtless produce many constructive suggestions which, however, can only be made fully effective if they receive complete support from management. Moreover, the findings of the committee will not become generally available until next fall, while the need for educational effort is immediate.

Rock Island Exhibits Newly Delivered Passenger Cars

Lounge and bar end of the coffee-shop-lounge car

The fiesta car is a departure from standard interior treatment. The canopies are red and white; the woodwork oak; the upholstery red; and the flooring red and yellow

NINE luxurious cars, recently delivered to the Chicago, Rock Island & Pacific to augment its fleet of 20 streamliners, were on public exhibition at LaSalle Street station, Chicago, on November 12. These are part of a total order for 57 passenger-train cars, 37 of which were delivered previously and 11 of which are still to be received. The Pullman-Standard Car Manufacturing Company is furnishing the entire order, amounting to $5,500,000.

Most spectacular of the nine luxury cars is "El Cafe," a coffee-shop-lounge car which the Rock Island has chosen to describe less prosaically as a "fiesta" car. In keeping with the spirit which

One end of the fiesta car features cocktail lounge space and an adobe bar

its name suggests, the fiesta car is brilliantly decorated in colors of Mexico and the Southwest — the ceiling is canopied in red and white, the flooring tiled in red and yellow. Tables, seating 32, are of oak, hand-carved by Jesus Torres, a craftsman from south of the border. The chairs, also of oak, are upholstered in orange-red leather with rawhide lacing. Draperies are of serape patterns. The lounge end seats 14 and features an "adobe" bar. "El Cafe" will be assigned to the "Golden State" operating between Chicago and Los Angeles, Cal., over the Rock Island and Southern Pacific and will be primarily for the use of coach passengers, although available to Pullman passengers as well.

"El Comedor" is a full diner—also for assignment to the "Golden State" —and seats 36. The color scheme is based on two important minerals of the Southwest—turquoise and copper. Its decorative copper embossing is also the handiwork of the Mexican Torres, as are illuminated replicas of ancient Mexican devil masks at either side of the main entrances to the dining space. The metal chairs are finished with copper and upholstered in a golden yellow, representative of the desert sun.

The club-diner, entitled "Pikes Peak," for assignment to the "Rocky Mountain Rocket" between Chicago and Colorado Springs, Colo., provides a snack and beverage service and augments the regular diner included in the train's consist. The car includes dormitory space for dining-car personnel.

The "Golden Harvest," another dining car for assignment to the "Golden State," has appointments comparable to those of "El Comedor" and, along with the fiesta car, includes selective radio and wire recording sound-reproduction equipment.

The "Nebraska" is a parlor-buffet-observation car seating 34, and has facilities for beverage and sandwich service. It is also equipped for radio and wire recording. The "Nebraska" will be placed in service on the new "Corn Belt Rocket" between Chicago and Omaha, Neb., when it is inaugurated on November 23.

The "Valle Verde" is one of the two 48-seat Day-Nite coaches which were on exhibition prior to assignment to service on the "Golden State," and the "Lincoln" is one of an order for sixteen 68-seat coaches for assignment to the "Rocket" trains.

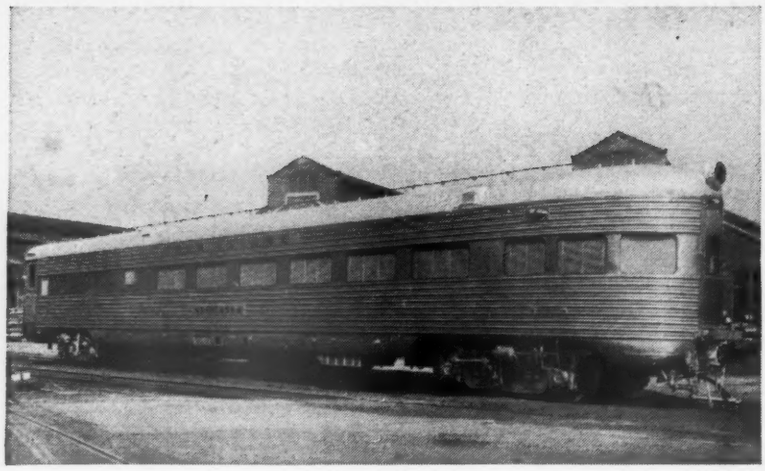
Included in the exhibit of new equipment was a baggage-dormitory car. This has 30 lin. ft. of baggage space and the balance of the car is devoted to train-staff quarters. Dormitory facilities for 24, complete with shower baths, toilets and lockers, a stewards' room with separate facilities, and desk space for the train conductor are included. This car will operate on the "Golden State."

A feature of the baggage-dormitory car is the location of the air-conditioning unit in a central section of the car roof instead of at either end as is customary.

This arrangement facilitates inspection and repairs. An unusual method of heating the baggage compartment is also employed. A Trane overhead unit heater is installed in the ceiling and

The observation-parlor car "Nebraska" accommodates 48 passengers. This car will go into service on the new "Corn Belt Rocket" beginning November 23

The dining car, "El Comedor," is finished in copper and turquoise. The decorative copper embossing above the windows and the Mexican devil masks at the ends of the car are hand-worked



Exterior of the observation-parlor car

Trane overhead unit-heater installation in the baggage end of the dormitory car

arranged to blow air over a heating coil and diffuse it downward and sideways through the baggage section. About 40 per cent of the wall space otherwise required for radiators is saved by this arrangement.

The Rock Island cars embody Pullman-Standard girder construction with fluted stainless outside sheathing, stainless-steel ends and vestibule. All of the cars are equipped with roller bearings and tight-lock couplers.

A new pressurized method of introducing fresh air direct to the air-conditioning blower fans through sealed ducts is used. This maintains constant air pressure within the car and prevents dust or dirt from entering regardless of outside atmospheric conditions.

Another new feature is the kitchen ventilation being tried out on these Rock Island diners, which operates as follows: The air supply is provided through a blower located at the end of the car, receiving air from the outside which is filtered and blown through a duct suspended from the ceiling inside the kitchen. This duct has air outlets in the side with adjustable diffusers, allowing the air to be deflected either at an upward or downward angle. Each diffuser also has a shut-off which functions by closing a vane over the air outlet, and enables any one of the cooks not desiring the air flow to shut it off without interfering with the others.

On the underside of the air duct is a long slot through which air flows down in the form of a curtain at the front of the range. This is intended to protect the cook from the heated draft which ordinarily comes off the top of the stove.

The exhaust system includes two fans on the back wall above the stove to remove odors and heat back of the air curtain; also one or two ceiling fans to remove the hot air under the ceiling. The design of air duct supplies a hood over the top of the stove. There is an exhaust from the dining room into the kitchen of approximately 500 cu. ft. per min. to avoid back drafts from the stove and any negative or positive pressure in the kitchen which would cause the air to flow from the kitchen into the dining room. This system is balanced and designed to function so as to give comfortable working conditions in the kitchen, and to remove odors and warm air, regardless of whether the train is running or standing.

On the early evening of November 11, the Rock Island played host to members of the press from Chicago and the nearby Midwest. After an inspection of the equipment, refreshments were served in the coffee shop-lounge car. The public exhibition opened on November 12 with music by the 85-piece Waite High School band from Toledo, Ohio, and by the Rock Island's own 40-voice Rocket Chorus. A descriptive brochure, distributed to visitors entering the first car, described the equipment in the order in which displayed, and listed the service assignment of each car.

Day-Nite coaches for assignment to the "Golden State" provide spacious seating for 48. The color scheme is burgundy and blue

Securities of Reorganized Roads Selling Far Below Par

I. C. C. bureau's "Monthly Comment" compares common-stock earnings under revamp plans with those of roads not involved in bankruptcy proceedings

FIGURES indicating that financial markets are appraising securities issued under railroad reorganization plans on a lower basis than the par or stated values were presented by the Interstate Commerce Commission's Bureau of Transport Economics and Statistics in the latest issue of its "Monthly Comment." The "Comment" also compared the 1937-1946 earnings per share of common stock of eight roads not involved in reorganization proceedings with what the per-share earnings of eight reorganization roads would have been if capital structures of their reorganization plans had been in effect during the same 10-year period.

For the former showing the bureau first selected three roads where reorganization plans have become effective —the Chicago, Milwaukee, St. Paul & Pacific, the Chicago & North Western, and the Western Pacific. The aggregate par value of their outstanding securities as of December 31, 1946, was shown as $893,976,972, while the "market value" was shown at $389,988,135. Generally, the market values were determined by prices as of October 31, although in some instances the September 30 prices were used, while in one case the redemption price served. As the bureau pointed out, the detailed figures indicated that in each case the total market value of the securities was "considerably below the par value," but the first mortgage bonds of each road were "close to or above par."

First Mortgage at Premium

The Milwaukee's first-mortgage 4 per cent bonds, with a par value of $59,239,100, were shown to have a market value of $62,201,055; but the market value of all of its bond issues was $128,041,004 as compared with a par value of $166,281,000. Its preferred stock, with a par value of $112,174,000, had a market value of $33,091,330, while its no-par common, with a stated value of $212,321,400, had a market value of $17,516,516.

The market value of the North Western's first-mortgage 3 per cent bonds was slightly less than the par value—$52,645,600 as compared with $53,312,000; but this and its other bond issues, with aggregate par values of $135,752,772, were shown with a market value of $103,758,879. Its preferred stock, with a par value of $91,452,700, had a market value of $36,123,817, while its no-par common, with a stated value of $81,630,300, had a market value of $13,060,848.

The market value of the Western Pacific's $10,000,000 issue of first-mortgage 4 per cent bonds, was shown at the $10,300,000 redemption price; and the market price of its other bond issue (general mortgage income 4½'s) was also above par—$11,881,449 as compared with $11,667,100. However, its preferred stock, with a par value of $31,850,000, had a market value of $24,524,500, and its no-par common, with a stated value of $40,837,700, had a market value of $11,689,792.

In connection with these three roads, the bureau pointed out that sinking funds have operated since December 31, 1946, to reduce the amount of outstanding securities shown in the foregoing comparisons. It went on to present similar data for four additional roads which were reorganized more recently or are in the "final stages of reorganization."

These roads are the Denver & Rio Grande Western, the St. Louis-San Francisco, the Chicago, Rock Island & Pacific and the New York, New Haven & Hartford.

Rio Grande, Frisco, R. I., N. H.

Here the market values were the average of the October 31 bid and asked prices on the when, as, and if issued basis; and again they were shown to be substantially below the par values. The totals for the Rio Grande were: par value, $147,256,669, market value, $71,053,858; Frisco, $244,852,808 and $111,229,695; Rock Island, $338,184,360 and $184,863,511. No comparative totals were shown for all New Haven securtities since the new common stock

Chesapeake & Ohio in Radio City

Utilizing curved walls of striated plywood with dioramas of scenes along the right-of-way, the new Chesapeake & Ohio ticket and travel office in Rockefeller Center, New York, creates a feeling of spaciousness within a comparatively small area.

Construction and erection of the woodwork by the Nuroco Woodwork Company, New Rochelle, N. Y., presented engineering difficulties. The finished walls are of waxed natural Weldtex and curve around air-conditioning equipment and other facilities. The floor has a Kelly green carpet and the lighting is indirect.

The office was designed by Dorothy Draper, Inc.

Volume of Intercity Passenger Traffic in Passenger-Miles by Kinds of Transportation Years 1941-1946

Transport agency	1941	1942	1943	1944	1945	*1946
	Passenger-miles (millions)					
Railways, steam and electric	30,583	55,073	89,865	97,704	93,535	66,238
Highways:						
Motor carriers of passengers	13,646	21,515	27,416	26,548	26,927	25,694
Private automobiles	264,316	199,635	147,131	151,251	179,837	253,570
Total	277,962	221,150	174,547	177,799	206,764	279,264
Inland waterways including Great Lakes	1,821	1,860	1,927	2,187	2,056	2,327
Airways (domestic revenue service)	1,370	1,418	1,632	2,264	3,362	5,947
Grand total	311,736	279,501	267,971	279,954	305,717	353,776
	Per cent of annual total					
Railways, steam and electric	9.81	19.70	33.53	34.90	30.60	18.72
Highways:						
Motor carriers of passengers	4.38	7.70	10.23	9.48	8.81	7.26
Private automobiles	84.79	71.42	54.91	54.03	58.82	71.68
Total	89.17	79.12	65.14	63.51	67.63	78.94
Inland waterways including Great Lakes	.58	.67	.72	.78	.67	.66
Airways (domestic revenue service)	.44	.51	.61	.81	1.10	1.68
Grand total	100.00	100.00	100.00	100.00	100.00	100.00

* Preliminary estimates.

was not quoted as of October 31. New Haven bond issues, however, were shown to have had a par value of $178,055,097 as compared with a market value of $82,177,673; and its preferred stock, with a par value of $47,639,172, had a market value of $8,217,757.

The reorganization roads used in the comparisons of per-share earnings on common stock were the same seven, plus the Seaboard Air Line. As noted above, these comparisons were based on the assumption that the reorganization plans had been in effect throughout the 1937-1946 period, and the data were derived "with minor modifications" from recent issues of "Standard & Poors—Railroad Securities—Earnings Forecaster." The eight roads, not involved in reorganization proceedings, whose per-share earnings were also shown in the comparisons, were the Atchison, Topeka & Santa Fe; Chicago, Burlington & Quincy; Great Northern; New York Central; Pennsylvania; Southern; Atlantic Coast Line; and Union Pacific.

Per-Share Earnings on Common

For the reorganization roads, the average earnings per share on common stock for the 10-year period were shown ranging from a deficit of $1.12 for the Rio Grande to earnings of $6.42 for the Seaboard. None of the eight roads would have earned anything on their common during the four years from 1937 through 1940, but all except the Rio Grande would have had earnings on their common from 1941 through 1945; and all except the Rio Grande, Milwaukee and New Haven would have earned something in 1946. As the bureau noted, the per-share earnings during the full war years, 1942-1944, were "substantial," but they dropped "considerably" in 1945 and 1946. The whole range was from the North Western's 1937 per-share deficit of $19.97 to the Rio Grande's 1942 per-share earnings of $36.43. The latter, however, made the poorest relative showing, having earnings on its common in only three of the 10 years; and its per-share deficits in 1945 and 1946 were $17.68 and $9.11, respectively.

Among the eight large roads not involved in reorganization proceedings, the 10-year average of earnings per share ranged from the Central's $2.91 to the U. P.'s $12.40. Four of the eight roads had earnings on their common in each of the 10 years, the only per-share deficits being the Central's $3.13 in 1938 and $1.62 in 1946; the P. R. R.'s 65 cents in 1946; the Southern's $1.69 in 1937 and $2.69 in 1938; and the A. C. L.'s $2.27 in 1938. The largest per-share earnings shown in this table were $27.79 for the Santa Fe in 1942.

Another article in the "Comment" discussed preliminary figures showing the volume of intercity passenger traffic in 1946 by types of transportation. The data indicated that the railroads last year performed 18.72 per cent of this service, nearly twice their 1941 proportion of 9.81 per cent but considerably less than their wartime share which reached a peak of 34.9 per cent in 1944. The 1946 estimates, together with comparisons with the five prior years, are set out in the table. As noted in the *Railway Age* of October 18, page 65, the previous issue of the "Comment" contained similar data on volume and distribution of intercity freight traffic.

In presenting comparative figures on freight-car ownership as of December 31, 1946, and 1937, the bureau noted that the number of freight-carrying cars owned or leased by Class I line-haul roads was practically the same on both dates (1,743,008 and 1,743,743, respectively); but the number of box cars declined by 27,517 between 1937 and 1946 or 3.64 per cent, while the number of gondolas and hoppers increased 58,151 or 7.28 per cent. By districts the car ownership situation was found to have "varied considerably." Roads in the Eastern and Western districts owned fewer box cars on December 31, 1946, than in 1937 while ownership was up 9.4 per cent in the Southern district. Meanwhile, ownership of gondolas and hoppers increased in all districts. For all freight-carrying cars, the percentages of change were: East, decrease 4.33; South, increase 14.55; West, decrease 2.5.

The bureau calculated that the increase in average capacity of freight cars between 1937 and 1946 (from 49.2 to 51.3 tons) was equivalent to 72,825 cars of the 1937 capacity. It went on to point out that the "intensive use" made of freight-carrying equipment in 1946 was indicated "by the fact that the Class I roads handled 592 billion ton-miles of revenue freight in that year as compared with 360.6 billion in 1937, or an increase of 64 per cent, despite the fact that only about the same number of freight cars was available in both years."

Sample of Circuity

From the waybill data which it inherited from the former Board of Investigation and Research, the bureau presented figures showing the circuity of rail movements in 1939 for 33 commodities. The combined total circuity for the group was shown at 12.7 per cent as compared with 11 per cent found by the former federal coordinator of transportation for all carload traffic terminated on December 13, 1933. It also compares with the 13.8 per cent circuity shown from a "systematic sampling" by the Office of Defense Transportation of all carload traffic originated on January 12, 1944. While it recognized that these three circuity figures were not "strictly comparable," the bureau nevertheless thought they were of "some interest in that the years used are those of a depressed traffic volume (1933), of a peak war traffic (1944) and the traffic in a prewar year of recovery from depression levels (1939)."

Fuel Purchases and Prices

Data on quantities and prices of fuel purchased by Class I railroads showed that the average cost of coal purchased at the mines increased from $1.88 per net ton in the first eight months of 1940 to $3.41 in the same period this year, a rise of 81.4 per cent. For other types of fuel the increases in cost ranged from 15.4 per cent for electric current to 88 per cent for fuel oil. The cost of Diesel fuel was up 55.9 per cent, from 4.42 cents per gallon to 6.89 cents. The quantity of Diesel fuel purchased was up 878 per cent, or from 50,986,000

(*Continued on page 47*)

Station-leaving signal at the north end of Rock Haven

C. T. C. Down by the Ohio

New installation on 137-mi. single-track subdivision of the Louisville & Nashville cuts 1½ to 2 hr. from the running time of through tonnage freight trains

REDUCTION of train stops and delays and of the running time of tonnage freight trains, elimination of train orders, and increased overall operating efficiency—these are the results of an installation of centralized traffic control on 137 mi. of single track of the Louisville & Nashville, between Louisville, Ky., and Henderson, which is a part of the main line between Louisville and St. Louis, Mo. The south end of the territory is at Strawberry, about six miles from Louisville, where there is a junction with the main line between Louisville and Nashville. From Strawberry, the line follows the valley of the Ohio river to Henderson, where it joins the line between Nashville, Evansville and St. Louis. The control machine is located at division headquarters at Evansville, 12.4 mi. north of Henderson and across the Ohio river.

The traffic in this territory includes three passenger trains, three through freight trains and one local freight in each direction daily, plus extras as required, thus averaging 14 to 16 trains daily.

Northbound freight trains average 2,800 tons, while southbound freights average 3,200 tons between Howell and Doyle, and 2,400 tons between Doyle and South Louisville. The differences in ratings are due to ascending grades southward, which are heaviest between Mystic and Guston but do not exceed one per cent.

Prior to the installation of C.T.C., train movements were governed by timetable and train orders. Automatic block signaling was in service on 60 mi. between Strawberry and Stephensport, no signal protection being provided on the remaining 77 mi. between Stephensport and Henderson, except at a drawbridge over the Green river at Spottsville, 9.4 mi. south of Henderson. In deciding on the system of signaling to be installed, consideration was given to extension of the existing automatic block from Stephensport to Henderson. However, this would not have eliminated the train orders, and while the average number of daily train movements is not great, the freight trains were encountering delays because of the long distances between open train-order offices, and the inability of the dispatcher to have train orders deliv-

ered promptly to cover last minute changes.

Train-order offices, open 24 hr., were formerly located at Strawberry, Irvington, Cloverport, Doyle and Henderson, while 8-hr. offices were located at West Point, Brandenburg, Hawesville, Lewisport and Owensboro. Thus when only the 24-hr. offices were open, they were spaced at an average distance of 34 mi., and, when the 8-hr. offices also were functioning, open offices were spaced an average of 15 mi. apart. These conditions, combined with the fact that the line includes numerous curves and is close to the Ohio river, where fogs prevail, led to the decision to install C.T.C., rather than extend the existing automatic block signaling.

Passing Tracks Removed

Under the previous method of train operation there were 40 passing tracks spaced an average of 3.4 mi. in the 137 mi. between Louisville and Henderson. Of these, 15 were converted to controlled sidings with power switch machines and signals, the turnouts being changed from No. 10 to No. 12, thus permitting diverging train movements up to 15 m.p.h. These sidings are spaced at average intervals of 9.1 mi., 5.7 mi. farther than under the old operation. The sidings at Bishoff and Katharyn were lengthened. The capacities of the sidings range from 80 to 90 cars, with longer sidings of 116-car capacity at Irvington and Lewisport. Ten sidings were removed entirely, and at eight sidings one switch was removed, thus leaving a spur track. Seven other sidings were left in place with the hand-throw switches in service.

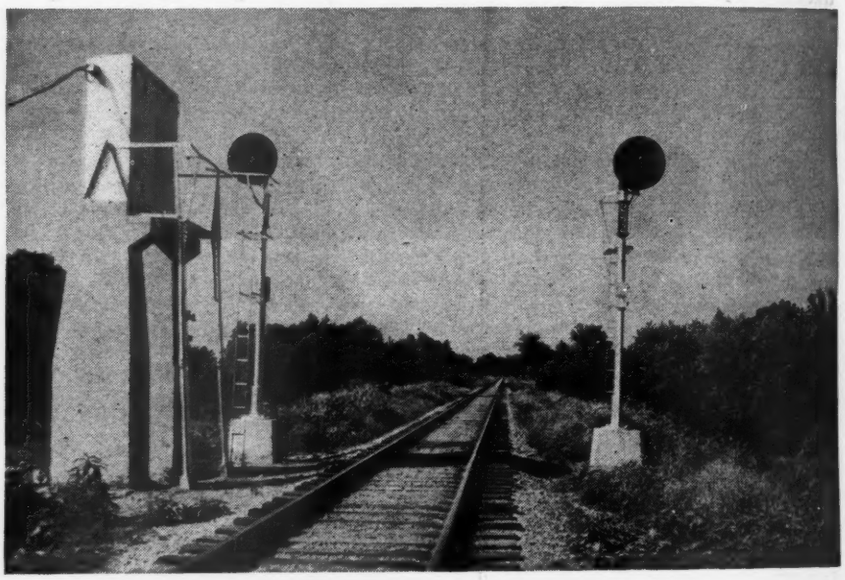
Although the passing tracks are now farther apart, trains progress over the division in less time than before. Passenger trains maintain their schedules and are able to make up time if running late. Freight trains save up to two hours in each direction. Under previous operation an average tonnage freight train required from 8 to 9 hr. between Louisville and Henderson compared with 6½ to 7 hr. with C.T.C., and sometimes less, depending upon meets.

Trains Depart Promptly

When a northbound freight train is ready to leave South Louisville, the operator in the tower pushes an annunciator button, which lights a lamp on the control machine at Evansville. The dispatcher then lines up and clears the signals. Similarly, when a train is ready to leave Doyle, a member of the crew pushes a button to give the dispatcher the information. When a southbound train is ready to leave Henderson, the towerman pushes a button which conveys this information to the dispatcher. Thus trains are allowed to depart without delays occasioned by having to wait for orders, which saves considerable time.

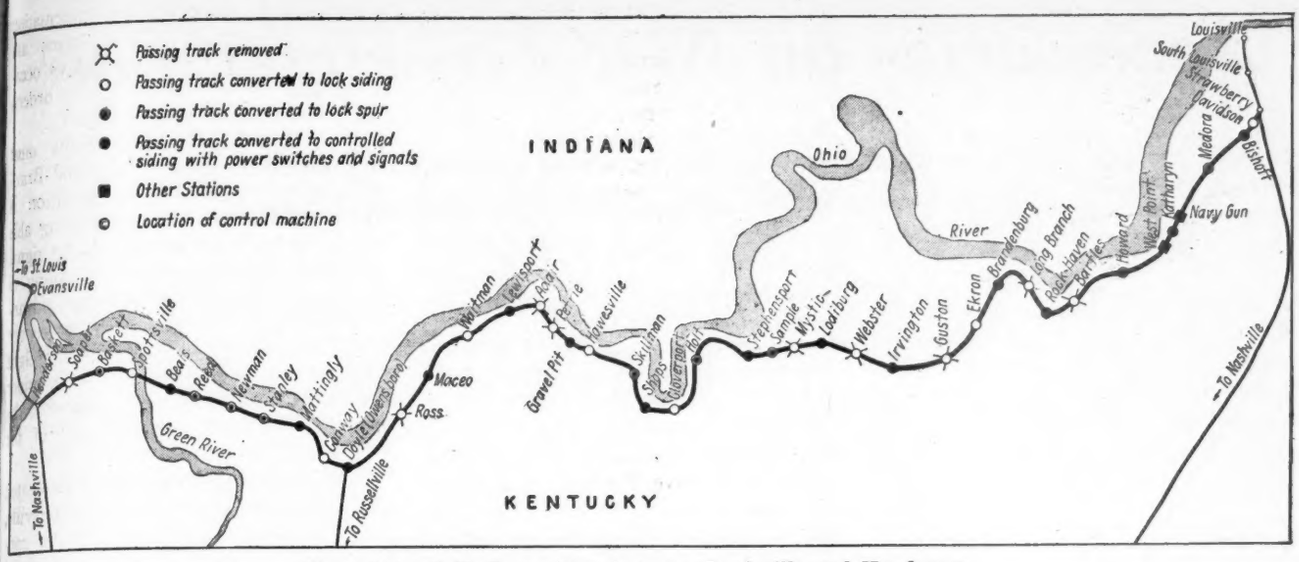
Sometimes northbound trains must double between Rock Haven and Brandenburg, 6.1 mi. This operation is facilitated by the dispatcher being able to control the train movements by signal indication without trainmen having to handle the switches. Another advantage under C.T.C. is that if passenger trains have mechanical failures, freight trains are kept moving, whereas under the old operation in such instances the freights had to be "dug out" of the sidings.

The control machine, which is located at division headquarters in Evansville, is "U" shaped and includes the conventional arrangement of switch, signal and lock levers, various indication lights,



Intermediate automatic signals with instrument case on high foundation for flood protection

The control machine at division headquarters in Evansville, Ind.



Map of the C. T. C. territory between Louisville and Henderson

track and signal diagram, and automatic train graph. Thirty switch levers are provided for the control of the same number of power switch machines; 37 signal levers for the control of 95 signals; 2 lock levers, each for the control of 2 electric locks; and 2 special indication levers. A new feature of the machine, compared with similar installations made previously on the L. & N., includes two independently-controlled track-occupancy lights on the diagram for each station-to-station block. Only one light was used heretofore. The purpose of the second block light is to provide additional information to the dispatcher regarding the progress and location of trains, thus making for improved coordination of train movements.

Searchlight Signals

The signals are the searchlight type. At the end of each controlled passing track there is a two-arm station-entering signal, a single-arm station-leaving signal on the main line, and a single-arm station-leaving dwarf signal on the siding. The top arm of each station-entering signal governs train movements on the main line and the bottom arm governs movements to the siding. These signals display red-over-red for Stop, red-over-yellow for Restricting, yellow-over-red for Approach and green-over-red for Clear. The leaving signals display a single red for Stop, yellow for Approach and green for Clear, the high leaving signal being designated as an absolute signal by a letter "A" mounted on the mast below the unit. To provide clearance where a high leaving signal is located between the main track and siding, the siding was thrown over to a 19-ft. center, and more if on a curve.

The country through which the railroad runs along the Ohio river has been subject to severe floods in past years, the last having been in 1939. The highest flood level above the rails at any point along the line was about 16.6 ft. at West Point, Ky. To prevent flood damage to relays and other signal equipment, the instrument houses and cases are mounted one foot or more above the 1937 flood level at the location involved. The special concrete foundations are of three types, namely, the one-leg foundations for small single instrument cases, at such locations as cut sections; two-leg foundations for double cases as used at intermediate automatic signal locations; and bungalow foundations, as at the ends of passing-track locations.

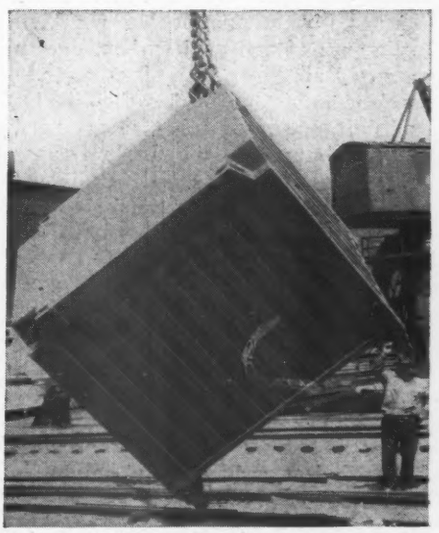
The project was planned and installed by the signal department forces of the Louisville & Nashville, under the direction of W. H. Stilwell, signal engineer, and P. P. Ash, assistant signal engineer. The major items of signaling equipment were furnished by the General Railway Signal Company.

The future belongs to those who prepare for it. Just as fast as scarce materials can be made available, America's railroads are preparing for the unprecedented heights of population and commerce which certainly lie ahead. They pledge themselves to continue their vital part in the way of life which has made America the hope of the world.
—William T. Faricy, president of the Association of American Railroads.

Dravo's Steel Shipping Container

A 276-cu. ft. welded steel shipping container, designed to withstand the severe strains and stresses imposed by rough handling at docks, piers and other freight terminals, has been developed by the Dravo Corporation, Pittsburgh, Pa. Of six-ton capacity, the container weighs 1,680 lb. and is 7 ft. 9 in. long, 6 ft. 5 in. wide and 6 ft. 10½ in. high.

In one of a series of tests, the container bearing a seven-ton load was lifted successfully by one lug, thus subjecting it to stresses and strains said to be similar to those exerted by ship or rail carrier motion or by rough handling. The container is also designed to prevent pilferage and theft of valuable merchandise or equipment, and to reduce handling and freight costs.



The Dravo steel shipping container

Accessories on New Passenger Cars

A review of some of the principal features and needed improvements in specialities used on modern equipment*

By J. GOGERTY
General Superintendent, Motive Power and Machinery, Union Pacific, Omaha, Neb.

I HAVE been asked to present a summary of the latest improvements and accessories that have been developed for passenger-train cars. First of all, I should like to be able to say that some good person had developed failure-proof air-conditioning equipment so that we mechanical officers could enjoy the summer season. Proper operation of air-conditioning equipment is one of the most serious problems with which we are confronted. It is true that during recent years many improvements have been made, such as increased capacity, better regulation and controls, multi-vent ceilings and improved distribution systems, and electrostatic filters and devices to remove odors, but I regret to say that there have been no outstanding developments toward a simplified and dependable system that can be readily maintained to insure against failures en route.

I do not mean to leave the impression that air-conditioning failures are the rule rather than the exception, but I think all mechanical officers present will agree with me that there is still room for considerable improvement in basic design.

In the earlier types of air-conditioning apparatus, some difficulty was also experienced with stale odors in the cars. This has been overcome by directing the air flow through activated carbon, which has been found preferable to the use of a deodorant which merely masks one odor with another. Some difficulties were experienced with the earlier use of activated carbon, due to restricted air flow. In designs recently developed, the activated carbon is installed in staggered tubes so arranged in an enclosure that the air flow comes in contact with the tubes, but is not restricted and the tubes can be readily removed and replaced.

Heating Equipment

Heating systems in passenger cars have kept pace with the other improvements in the way of better controls, distribution and regulation. Fin-tube piping is now used, which provides more efficient radiation and results in decreased weight as well as reduced space occupied by the piping, and providing more usable width within the car. One of the more recent developments has been an improved method of temperature control which automatically alters the heat output in each section or zone of a car to maintain even temperatures. The adjustment takes place almost instantly and avoids the variation of several degrees in temperature encountered with previous thermostatic controls.

Interior Finish

The railroads and seat manufacturers have made extensive studies to develop a more comfortable coach seat that would be suitable to the many sizes and shapes of passengers. During 1944 a special measuring chair was constructed and set up in railroad stations at Boston and Chicago. Thousands of passengers were measured under the direction of a specialist in human anatomy, for the purpose of finding out scientifically what principal dimensions should govern a railroad coach seat, and which would fit the greatest number of people comfortably. The results of this study and other studies made by various concerns have been given consideration by seat manufacturers and there are several improved designs of coach seats now available, employing both reclining and revolving features, and many types of foot rests and leg rests, which are largely a matter of individual preference. Various arrangements of staggered and group seatings in dining cars and lounge cars are also being tried out.

The interior finish of passenger cars is widely diversified and largely influenced by the territories in which the cars are to be operated. Some decorative schemes are elaborate to a point of being gaudy, while others are extremely plain. It is desirable that decorative schemes be attractive and restful, but care should also be taken to know that they can be readily maintained. As an example, increased maintenance results when eight instead of four colors are used in a decorative scheme or when draperies and floor coverings cannot be easily serviced. Various plastics and other synthetic products are being offered for wall finishes, upholstery material, table tops and decorative purposes, and their use will no doubt become more widespread as further developments are made.

Electrically operated accessories such as toasters, grills, refrigerators and dishwashing and sterilizing equipment are extensively used in dining cars. One of the most interesting developments is the study being given to adopting electronic energy for dining car kitchens, particularly the electronic cooking of food. No installations have been made as yet in a dining car for practical tests, but the experiments to date indicate future possibilities which are being closely studied. Experiments already made show that food can be rapidly cooked by electronic heat energy, but not in the ordinary sense of frying, broiling or braising. After being cooked by electronic heat the food must then be browned or seared by external application of surface heat to provide an appetizing appearance. Also, as presently developed, the electronic heat energy will penetrate only 2½ in. into the material to be cooked, which would prevent the preparation of heavy roast items, turkey, ham, etc., which have the greatest appeal to the traveling public.

Electronic cooking employs power tubes which require a constant flow of water around the tubes to prevent their burning out, and the provision of sufficient water-carrying capacity and electric power supply in dining cars is a considerable problem.

Fluorescent Lights

Fluorescent lighting is now being commonly used. It improves lighting conditions, gives a greater lighting intensity at the reading plane, and is being generally installed on cars being built and on older cars being remodeled. One of the newer types of cold lights employs long, thin tubes which light instantly when the switch is turned on and without the usual flashing common to lights of this type. Electric drinking water coolers are, of course, provided on all the latest type cars.

With the advent of sealed windows

* A paper presented at the August 14 meeting of the Pacific Railway Club, held at Los Angeles, Cal.

the problems of cleaning the interior sides of double glazed windows and prevention of fogging were encountered. Windows of the earlier type were sealed and fogging was prevented by means of a dehydrating element placed between the sash. In a later design, breather-type sash have been used with good results, eliminating the use and periodic renewal of the dehydrating element. In another type, the space between the two panes is dehydrated and permanently sealed. Safety glass is widely used and a special type of heat-absorbing glass is now available which reduces the heat and glare of the sun. On all of the newer passenger cars the windows are installed flush with the outside of the car to improve appearance and decrease wind resistance. Improved Venetian type blinds are being commonly used and have met with considerable favor by the public.

Improved Radios

Radios have come into more extensive use, both in coaches and dining cars as well as lounge cars, and the new radios offered by manufacturers since the war are a great improvement over those previously available. There is a new type of radio designed especially for use on railroad equipment for better reception and to eliminate static. This radio, in addition to special antenna, tuning, amplifier and control unit, also includes a magnetic reproducing unit and associated equipment to provide a program of music using wire recorders. A microphone can also be used with this type of equipment for making train announcements. In the application of radios to all the newer and remodeled cars, instead of having the loud speakers at the ends of the car, a sufficient number of speakers are installed in the ceiling to provide an even distribution of low level sound throughout the car.

Intra-train telephones have been successfully used for some time and telephone service from moving trains to connect with regular telephone switchboards in the general telephone system has now been developed. The calls travel part way by radio and part way by wire and have been experimentally used in conversing with ships at sea.

Prior to the adoption in 1939 of the A. A. R. specification for the construction of new passenger cars, the basic fundamentals followed in their construction were those outlined by the U. S. R. P. O. specification in effect at the time the cars were built. The new A. A. R. specification, while following closely the fundamentals as outlined in the R. P. O. specification, goes into considerably more detail and includes certain additional requirements, such as the so-called squeeze test, in which the car structure shall resist a minimum static end load of 800,000 lb. at the rear draft stops ahead of the bolster on the center line of draft without developing any permanent deformation in any member of the car structure, and in meeting this requirement it is important that the vertical deflection be kept to a minimum. The specification also provides that an anti-climbing arrangement shall be applied at each end of the car, which requirement is met by the use of tight-lock couplers.

In this specification, recognition was made of the use of materials other than open-hearth steel, thus reducing the weight of car body, but meeting the strength requirements due to the higher physical properties of the material used. It is interesting to note that the new passenger cars which are now being built or on order will employ materials having higher physical properties than open-hearth steel in order to reduce weight and, therefore, the use of lighter, stronger and more durable materials will constitute one of the major advances in future car construction.

Truck Features—Brakes

The trucks have been improved to provide easy riding through proper springing, shock absorbing and braking. Roller bearings are used generally on new passenger cars being built and are being applied extensively to existing passenger cars. The use of grease instead of oil for lubrication of roller bearings on passenger cars is also being considered, which should reduce the required servicing attention. Hot journal detectors of various types are commonly used.

Many improvements have been made in the air-brake equipment in recent years, and high-speed electro-pneumatic type brakes are now employed, which provide a rapid and flexible brake control. A speed-governor control is used which automatically regulates the brake cylinder pressure in proportion to train speed. Wheel slip devices are also available which automatically release brake cylinder pressure if the wheel starts to slide. This is accomplished by means of mechanism mounted on each axle which operates a dump valve to release brake cylinder pressure whenever wheel speed is abnormally retarded by brake shoe action. The brake cylinder pressure is restored as soon as the normal rotating speed of the wheel is restored.

Deliveries Lagging

We are all familiar with the observation domes, children's recreational compartments, cocktail lounges and the many de luxe appointments in lounge cars. Several different arrangements of sleeping cars have been developed, providing maximum accommodations within a minimum of space with a definite trend toward individual rooms replacing the familiar open sections.

Each of the many advancements in the construction and appointments of the modern passenger car is a subject for discussion in itself, but unless deliveries can be improved upon I am afraid the advances which I have endeavored to outline will have become obsolete before the new equipment is available in quantities. In any event, we can expect that developments in passenger car construction will continue to uphold the tradition of the railroads as the best in safety, comfort and dependability to the traveling public.

NEW BOOK . . .

Ruler of the Reading: the Life of Franklin B. Gowen, 1836-1889 by Marvin W. Schlegel. Foreword by R. W. Brown, President, Reading Company. 308 pages. 9 in. by 6¼ in. Bound in cloth. Published by the Archives Publishing Company of Pennsylvania, 410 Dauphin Building, Harrisburg, Pa. $4.

This book is not a history of the Reading, and in a sense only is it a biography of Franklin B. Gowen. It is rather a story of the business life of Gowen from the time that he took over the presidency of the Reading in 1869 until his death at his own hand in 1889. Since Gowen was actually ruler of the Reading until 1884 the book might also be called the story of the financial troubles of the then Philadelphia & Reading during the period when Gowen was its head, and after.

Troubles the Reading did have, and not the least of them was Franklin B. Gowen. It was Gowen who was responsible for the railroad's parentage of the Philadelphia & Reading Coal Company, which always was a drain on the railroad's exchequer. Gowen too was the man who fathered many disastrous attempts at expansion that the Reading made in the eighth and ninth decades of the 19th Century. In connection with one of these attempts at expansion he sought and secured the help of such persons as Vanderbilt, Carnegie, Oliver, Frick, and others. This was the abortive South Penn Railroad, proposed as competition for the main line of the Pennsylvania.

For the reader who is interested only in the operating end of the railroad business there is nothing in this book, as its scope is restricted to the financial phases of railroad management. As a picture of the financial anarchism of the latter half of the 19th Century this work is well done. There are also two very interesting chapters on the "Mollie Maguires" and the labor troubles in the Pennsylvania anthracite fields during the Seventies of the last century.

Looking east along the new alinement of Gulf curve as the track work neared completion. Old curve and channel are at the extreme left—new channel to the right

River "Takes Siding" for N. Y. C. "Twentieth Century" Parade

Major line change, eliminating a 7-deg. 24-min. curve at Little Falls, N. Y., required carving a new river channel out of solid rock to make way for improvements

THIS week the New York Central placed in service a major line change on its four-track main line at Little Falls, N. Y., a project which has eliminated Gulf curve, the 7-deg. 24-min. curve which, in April, 1940, was the scene of a serious accident to the "Lake Shore Limited." In addition to lifting a speed restriction of long standing, the line change also reduced the gradient for westward traffic and provided for the realinement of a compound curve into a simple curve of lesser degree, immediately east of Gulf curve.

On each side of Little Falls, which is located about 74 mi. west of Albany, N. Y., and 220 mi. east of Buffalo, the line follows the valley of the Mohawk river which, in the vicinity of Little Falls, lies in a deep rock cut. Here, at a cost of approximately $2,500,000, the course of the river has been changed by the construction of a new channel involving 130,000 cu. yd. of excavation, 65,000 cu. yd. of which was solid rock. In addition, an embankment containing 80,000 cu. yd. of rock, mainly from stockpiled excavation, and 360,000 cu. yd. of gravel from borrow pits, was constructed, two new bridges were erected, and upon this finished grade a new four-track roadbed was placed.

When originally built in 1836, the then single-track line was part of the old Utica and Schenectady Railroad, and at Gulf curve it followed the north, or outside, bank of a sharp "elbow" in the Mohawk river. Subsequently, a barge canal was constructed on the south side of the river, which severed a point of land from the mainland, forming an artificial island in the river bend, known as Moss island.

As the speed of trains was stepped up, the size of equipment grew, and the volume of traffic increased, the trackage of the railroad was improved both in number of tracks and standards of construction to keep pace with these increased demands. There was little that could be done, however, to ease the curve at this location in the river valley, thus necessitating a speed restriction which was a veritable "thorn in the side" of operation for many years. This curve could only be reduced by moving it south over the existing channel, and

flattening it to bring the curvature within the limits for high-speed territory would place the line some 340 ft. south of the apex of the old curve, where it would rest on the north point of Moss island. In more recent years, with the new methods and equipment available, the means for doing the work economically was provided. As a result, the work was scheduled for 1940, shortly after the serious accident early in that year, but was held in abeyance until after the close of the war.

General Plans

The plans called for the excavation of a new river channel across Moss island, 600 ft. long and 150 ft. in width at the bottom, with 4 to 1 side slopes, which had to be cut out of solid rock. This provided for an average depth of 20 ft. of water. A 1-deg. 30-min. track curve was designed which would rest on the point of Moss island at the center, on a long embankment, and cross the existing channel at each end on much deeper embankments. Two new bridges to carry the new tracks across State Highway 5105 and an industrial track were also included in the plans. Since the rock to be removed in the channel excavation was to be used in facing the new embankments, especially on the new channel side, and for this purpose had to be stockpiled on the mainland, because of insufficient room on Moss island, a construction bridge, 180 ft. long, was built between the island and the mainland, to permit the stockpiling.

Construction

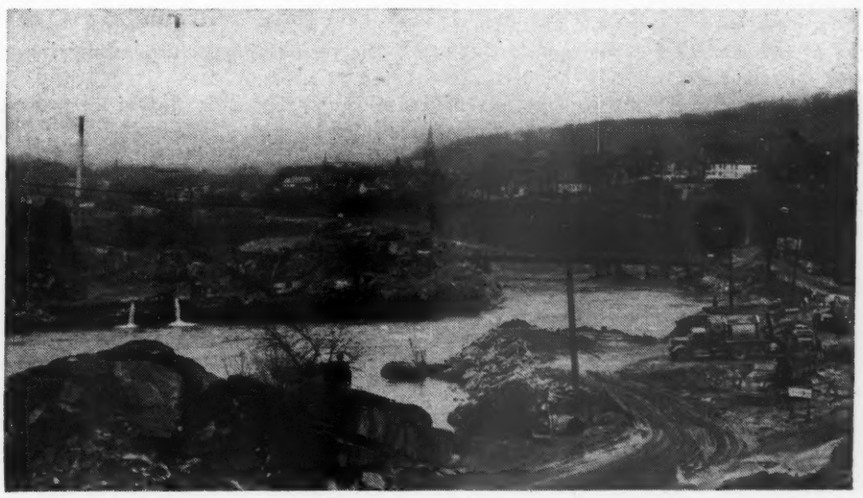
The natural ground in Mohawk valley at this point is composed of a dense, hard gniess rock which requires heavy blasting for its removal. Also encountered in the work were numerous potholes formed by the grinding action of entrapped boulders when the river flowed over a falls at this point in past ages.

Since the contractor elected to excavate the channel in the dry, the actual excavation was not started until means of damming the ends of the new channel were provided to keep the work area as water-free as possible. The required dams were formed by allowing a narrow rock wall to remain in position at the up-stream, or west, end of the new channel, and by constructing a sheet-pile cofferdam at the down-stream, or east, end, consisting of seven circular cells.

Each cell of the cofferdam was 32 ft. in diameter and was constructed of 30.7-lb. shallow-arch steel sheeting. The sheeting, which ranged in length from 20 to 60 ft., was driven around a floating timber template by means of a

General view of the site, looking west, at the beginning of construction. The heavy stripped line shows the new alinement over the tip of Moss island, while the dash lines show the location of the new river channel

Looking west, showing the new channel after flooding and, in the foreground, the partially completed new bridge over State Highway 5105



Looking west through the new channel (left side of picture), showing the cofferdam in the foreground, the rock dike in the far background, and the construction bridge over the old channel at the right

Right, View of the drilling operations, showing three wagon drills. Note the lines of finished holes around the drills. Above, The drill boat, dredge, barge and tug being used in the removal of the underwater portion of the rock dike

No. 7 McKiernan-Terry air-operated hammer supported by a Northwest No. 6 crane. As each successive cell was driven it was filled with gravel to seal it and help hold it in place, and to provide a roadway for walking the crane forward to permit construction of the next cell. The filling of the cells of the cofferdam required the use of 19,000 cu. yd. of gravel, which was obtained from a borrow pit located approximately 2.3 mi. from the site of the work. To seal the ends of the seven cells, a small auxiliary rectangular cell of 21 sheets was placed in a convenient cleft in the rock wall of the river channel at one end, while the opposite end was sealed off with a rock-filled timber crib, 16 ft. by 20 ft., constructed of 12-in. by 12-in. timber, tailored to fit the bottom of the river.

After the cofferdam was completed, excavation was begun in the new channel area. This required constant use of the previously mentioned construction bridge to the mainland for the removal of the material to the stockpile site, which was located an average distance of approximately 1,600 ft. from the site of the work. The larger rocks were pushed into the old channel on the line of the future fill, but no amount of filling in excess of 20,000 cu. yd. was permitted since this would have reduced the cross sectional area of the river below the established minimum section.

The rock was removed by blasting to break it up into sizes which could be readily handled with shovels for loading into trucks. In the blasting operations the holes were generally drilled on 5-ft. centers for excavation in 12-ft. cuts. The rock was so hard that the average drilling rate was only about 13 ft. per hour, and bits were dulled in an average of 15 in., and in some cases only 2 in. The drill holes were laid out in groups ranging from a few up to 200, with the average group numbering 60 holes.

The drilling was done by means of nine Gardner-Denver and one Chicago-Pneumatic wagon drills, and eight Chicago-Pneumatic and Ingersoll-Rand jack-hammers. Air for the drilling in the new channel was supplied through a 4-in. pipe line from a 3,092-cu. ft. electric-driven Chicago-Pneumatic air compressor. Elsewhere on the project, air was furnished by a portable 300-cu. ft. Jaeger compressor.

To keep a supply of sharp bits on hand, a blacksmith shop was set up which included three heating furnaces, a quenching tank, and two Gardner-Denver sharpeners. The density and hardness of the rock may be judged from the fact that the blacksmith shop was kept busy turning out from 500 to 600 drills a day during the major part of the time.

On completion of a battery of holes, they were packed with Hercules 60 per cent gelatin dynamite, using one-pound sticks. After being stemmed with sand, the charges were set off electrically in batteries ranging from a few holes up to 200 with three delay exploders. In breaking up single boulders, as little as ½ stick of dynamite was used.

After each round of blasting, the broken rock was loaded into Euclid trucks by means of shovels and was hauled to the stock pile. A Northwest 80 D and a 3-yd. Lima shovel were used in this work, loading into one 13-yd. bottom-dump Euclid and six 10-yd. end-dump Euclids.

The potholes encountered were invariably filled with sand and gravel, which was removed by dragline or clamshell prior to drilling holes to prevent any of the fine material getting into the holes and binding the drills. All this material was disposed of in a spoil bank adjacent to the rock stockpile.

Other equipment used in the general excavation included two D8 Caterpillar bulldozers, one D7 Caterpillar bulldozer, one 20-ton Lorain gas-engine truck-crane, and an additional Northwest 80 D combination dragline, crane and shovel.

On two occasions excessively high water in the river flooded the new channel while excavating operations were in progress, causing delays of about five days each time. In one case water came through a part of the rock dike at the west end, and in both cases it topped or broke through the cofferdam at the east end. To close these breaks, wood sheeting and sand bags were used on the dike, and rock and sand bags were used to block the breaks in the cofferdam. Before excavation could be resumed, the water had to be pumped out of the new channel. This was done by means of four gas-engine-driven centrifugal pumps—two 10-in., one 8-in. and one 6-in.—all working continuously.

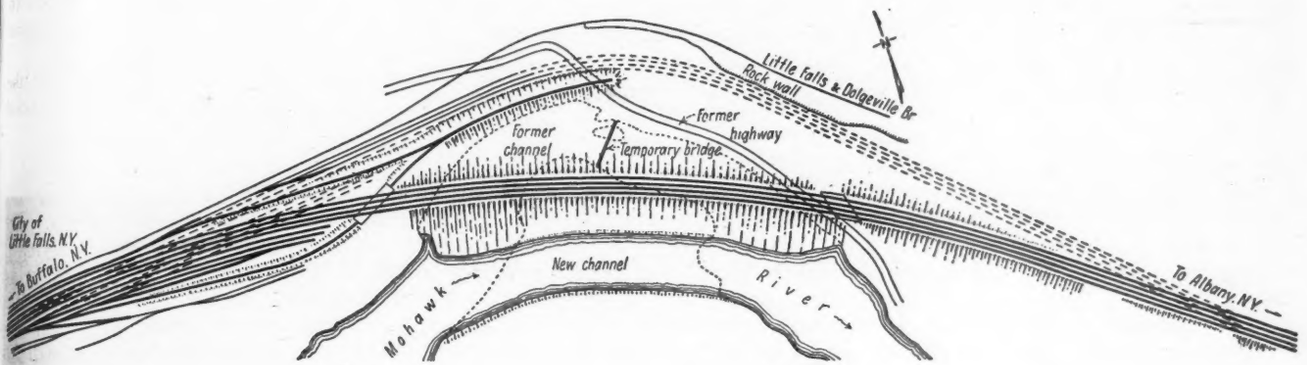
into the bottom-dump scow. The loaded scow was towed by means of a tug to the west end of the new line change and dumped along the line of work to close off the old channel.

Embankment

While completing work on the new channel, construction of the new line embankment was started. The embankment was built up largely of gravel from a borrow pit located approximately 2.3 mi. from the site of work and was faced with rock from the stock pile. Placing the fill was done for the most part with 22 rear-dump auto trucks, with capacity from 4 to 8 cu. yd. each, 6 Euclid rear

is, of course, the reduction of Gulf curve to 1 deg. 30 min. Other benefits derived include the flattening of the curve immediately east of the main curve, and the reduction of the gradient over the new line. Previously, the original curve was on a 0.75 per cent compensated gradient opposing westward traffic and was preceded to the east by a compound curve of 1 deg. 53 min. and 1 deg. 10 min. The gradient on the new construction is 0.40 per cent, compensated, and the compound curve east of the main curve was combined into a single simple curve of 1 deg.

While the new line is approximately 3,000 ft. long, the additional realinement at the east end makes the



General plan of the line change, showing the old and new alinements

When excavation in the channel between the cofferdam and the natural rock dike had been completed, the work of removing the cofferdam and dike was started simultaneously. The dike was cut down to about one foot above water level and was then drilled to approximately four feet above the bottom of the channel for the last operation before flooding the channel. Removal of the cofferdam required digging out the gravel fill in each cell and pulling the steel sheeting. The new channel was flooded on May 22, 1947, and the work of completing the removal of the cofferdam was finished about Aug. 5.

After the rock dike had been shot down to one foot above water level, as much of the material as possible was removed by means of the dragline and trucks. The underwater excavation to the finished channel grade was done by means of a drill boat, a 2-cu. yd. dipper-type dredge, and a bottom-dump scow. The drill boat, which had one drill, was used to drill the remaining rock to final grade. During drilling, the drill boat was guyed to various anchorage points and no special problems were involved. Shooting followed the drilling operations, which were then followed by dredging and loading of the material

dumps and 6 Euclid bottom-dump trucks, supplemented by a couple of bulldozers.

Progress in placing the embankment was from the east end, across the point of Moss island, and thence across the old channel at the west end. The completed embankment has a top width of 63 ft. at subgrade and 1¼ to 1 side slopes.

Other Features

While work on the embankment proceeded, construction of the two new bridges was carried out. One of these bridges, on a skew of 45 deg., carries the four new tracks over State Highway 5105 and is constructed of 12 deck plate-girders, spaced on 5-ft. centers, with a 9-in. reinforced concrete deck. Each girder is 67 ft. long, center to center of bearings. The second bridge carries the four main tracks over a single industrial branch track and is a series of I-beams encased in concrete, with an overall length of 126 ft. out to out. This branch will serve industries and sidings without the necessity of switching movements crossing the high-speed tracks at grade.

The major benefit of the line change

project extend over a total length of 6,300 ft.

The tracks constructed on the new alinement are on 13-ft. centers and consists of 127-lb. Dudley rail and 7-in. by 9-in. by 8-ft. 6-in. treated ties, 12 in. of cinder sub-ballast and 12 in. of stone ballast under the ties.

All tracks were laid from the east end, and the ballast was placed by work trains operating on the new tracks after they have been spiked to line on the new subgrade.

The plans and specifications for the work described were made under the general direction of George A. Noren, chief engineer of the New York Central, Lines Buffalo and East, and construction was carried out under the immediate direction of R. H. Kugler, engineer of construction. John Ehinger was resident engineer in the field.

The general contractor on the work was the Walsh Construction Company, Davenport, Iowa, with Nicholas Heck as superintendent, and Richard Dillon, project engineer.

The fabrication and erection of the bridge steel was sublet by Walsh to the American Bridge Company, and all track and signal work was done by railroad company forces.

Need for Speedier Hearings Told by Commissioner Aitchison

THE traditional "common-law-court" type of Interstate Commerce Commission hearings result in records of "unbearable" size, and "inevitably" consume so much time as to defeat the primary purpose for which the administrative agency was created, Clyde B. Aitchison, chairman of the commission, declared in an address at Chicago on November 7. As a result, he said, the procedure must be modernized or a substitute found if controversies before the commission are to be settled well and with even reasonable promptness.

Mr. Aitchison told members of the Chicago chapter of the Association of Interstate Commerce Commission Practitioners that the "volume of the records must be condensed and the time consumed in making the facts known of record must be shortened, while preserving the essentials insisted upon by law.

"The questions I raise today are whether, in making up the factual record, practical limits that are controlling are not recognized, and whether too much attention is not being paid to some outworn notions as to what is necessary and proper. I will state some of the considerations that lead me to ask these questions:

"(1) The commission, since the close of the war, has had thrust upon it a great volume of work, the aftermath of the war.

"(2) Questions are presented in formal cases that are of great difficulty, often of much novelty, and to a large extent rightly demand speed, and these cases compete with each other for precedence in progressing to the point of decision. They customarily are emergency cases. Some of them are potentially unprecedented in their size and in the details of issues presented.

"(3) The staff of the commission available for use in these cases is down several hundred persons below its prewar level. The tendency of statute law and decisions has seemed to be toward greater rigidity in procedure, which requires a larger, not smaller staff, if the work is to be done in conformity with law.

"(4) The multitude of these cases demanding simultaneous processing throws a great strain on both the commission and its bar, with little prospect for relief for a long time ahead.

"(5) In these times of emergency, to a greater extent than ever before—and it has always been true—the most important thing, and the most difficult thing, is for the commissioners to obtain an accurate appreciation of the vital, decisive facts. Seeing that this is done is primarily a responsibility of the bar of the commission, in contested cases. However, for one reason or another, there is a growing tendency for parties interested to tell the commission that while they have been hurt, they are not able to make out their case from the means at hand, and therefore seek to have the commission assume the full responsibility for developing the relevant facts. The statutory remedy of a 'complaint' is giving way to a 'petition for an investigation on the commission's own motion.'

"Comfortable" but Slow

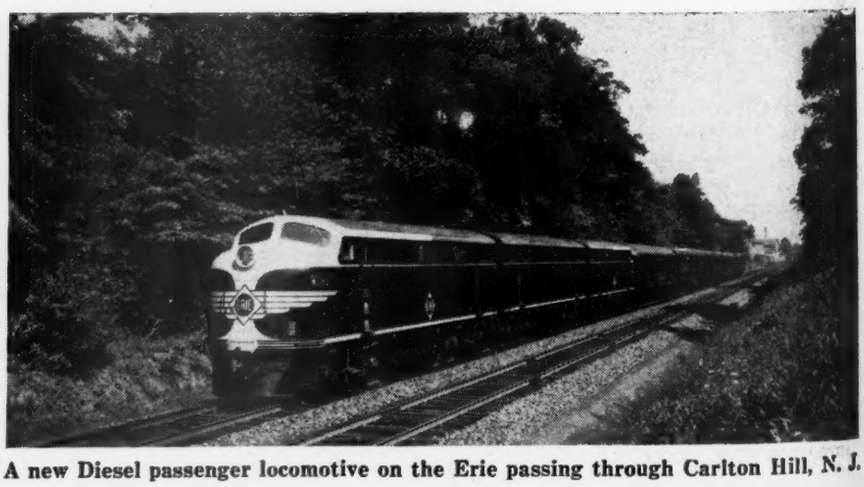
"(6) The method by which the commission learns the facts on which it must operate may be prescribed by the act [Administrative Procedure] or implied by the Constitution, as a 'hearing.' Many of the functions of the commission can be performed without such requirement, and we are not dealing with them, although we may well consider how successful such forms of procedure have proven to be.

"(7) The traditional, pre-World War I type of 'hearing' bottomed upon the type of procedure of the common law court, with some relaxations, worked well, was fair, and gave the commission the facts, albeit it was slow, expensive, and overemphasized the part of advocacy. Nevertheless, it was, as Commissioner Lane said, 'comfortable,' and persons accustomed to it are loath to accept suggestions for its change."

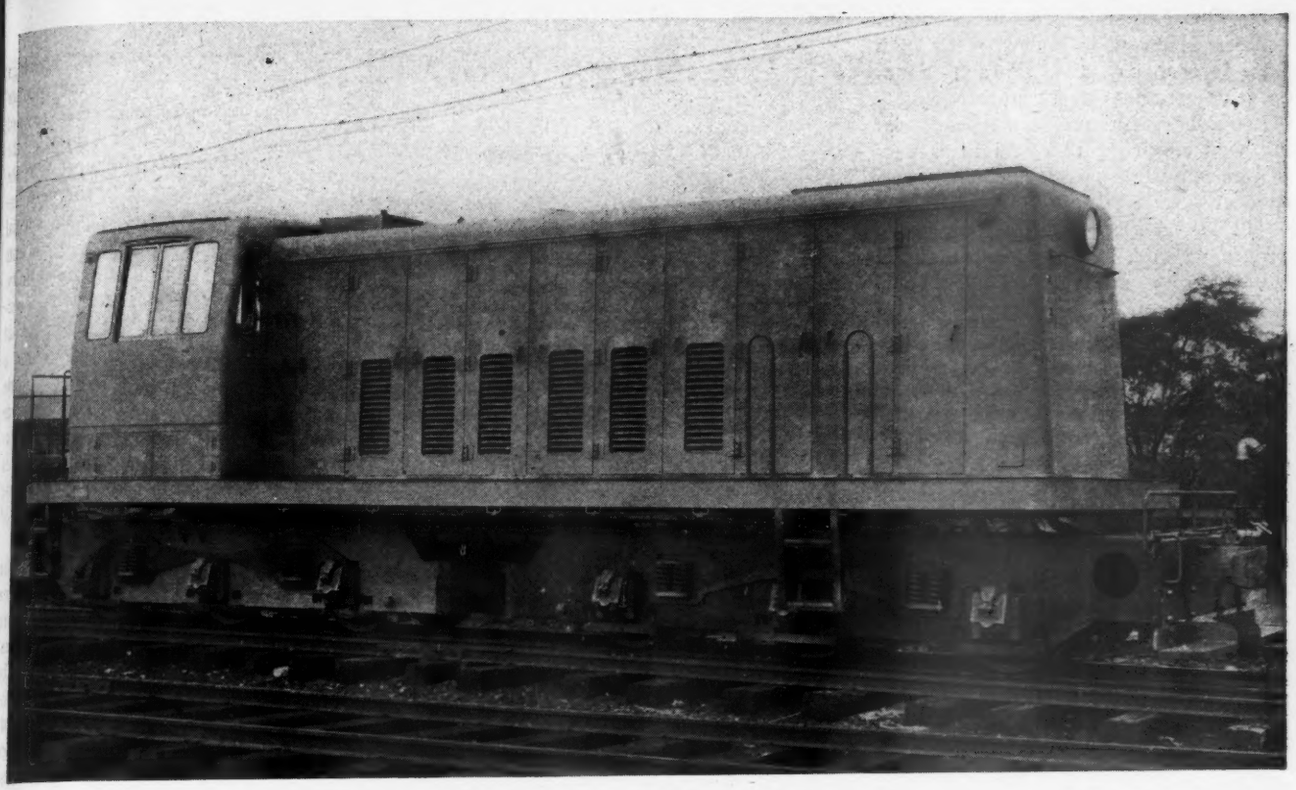
Discussing means for shortening the hearing process where oral hearings seem to be required by law, the speaker said that a number of devices toward this end were employed during the I. C. C. hearing at Chicago, in the railroads' request for a permanent increase in freight rates. "The special rule requirement to prepare statements in advance, and to give them publicity, makes for care on the part of the witnesses, and eliminates the element of surprise, which has no place before a body that is acting as a quasi-substitute for the legislature. It certainly saves the time of all concerned, avoids expense of travel in times when travel is difficult and costly, and gives those absent opportunity to keep abreast of the progress of the hearing."

Continuing to develop his theme, the commission chairman stated: "Anyone who sits through a long case where many interests are represented must recognize how much more could be accomplished in lesser time if all concerned exercised more self restraint; did not attempt to argue the case from the witness stand or with the witnesses; and recognized the futility of trying to build up an affirmative case by cross-examining hostile witnesses. And everyone must recognize how much time would be saved, and how the work of decision would be made more sure and speedy, if non-essentials were omitted from testimony and the test were applied, 'Does the commission really need to know *all* these facts'?"

Mr. Aitchison expressed his belief that, in framing oral arguments and delivering them before the commission, the advocate should put himself in the position of the one to whom the argument is addressed and who is to be convinced. The men on the upper side of the bench, he pointed out, should be reached by arguments and methods "that take into account the fact that the persons to be convinced are human, and their senses are not infallible and are not always efficient."



A new Diesel passenger locomotive on the Erie passing through Carlton Hill, N. J.



Meter-gage, 141,000-lb. general purpose Diesel-electric locomotive

Brazil Adds Diesels to Its Electrics

Although the country must import its oil, Diesel-electric motive power is able to show definite operating economies

By E. M. BILL
Transportation Divisions
General Electric Company
Erie, Pa.

WITH the scarcity of a good quality of native coal acceptable for steam-locomotive service and an increasing dearth of wood, Brazil's railroads have had to resort to other sources of energy for the handling of trains. Particularly during the war did the electrification of those railroads already operated by electric traction show up to the highest advantage. This has been augmented by great increases in operating economies by the introduction of the Diesel-electric locomotive.

It may seem anomalous that Brazil (a country practically devoid of oil reserves, and one that must import fuel oil for whatever use is made of Diesel-electrics in the country) can realize any advantage from this type of motive power. However, the local fuel situation (wood and coal) and the cost of foreign-coal imports are such that Brazil can afford to import fuel oil, pay a good price for it, and use it in Diesel-electric locomotives rather than attempt to burn either Brazilian wood or any imported good steam-coal that does not receive the equivalent of a subsidy in freight rates by being carried to Brazil as ballast in ships that operate primarily for the transport of food stuffs from Brazil.

The forests of Brazil virtually are "inexhaustible" but their economic accessibility for fuel purposes has been diminishing steadily.

The Sorocabana Railroad (a meter-gage line that is an instrumentality of the government of the State of Sao Paulo) has already met the fuel situation partially by the electrification of its double-track main line between the cities of Sao Paulo and Santo Antonio, a route distance of 87 miles. Electric power for this section comes from Cubatao power station of the Sao Paulo Tramway Light & Power Co. This station transmits power to the three substations of the Sorocabana Railroad at 88,000 volts, three-phase, 60 cycles.

To ease the fuel situation and to increase train speeds and weights on the divisions outside the present electrification, the Sorocabana has purchased, among others, 42 Diesel-electric locomotives from the International General Electric Company, all of which are being built in Erie, Pa., works of General Electric.

Rede de Viacao Parana-Santa Catarina (a meter-gage railroad that is an instrumentality of the federal government of Brazil, operating autonomously) has ordered eight Diesel- electric locomotives from the International General Electric Company. These will be duplicates of the locomotives to be built for the Sorocabana and will be used on main-line trains negotiating grades as high as three per cent and over rolling profiles. This road has reported phenomenal fuel savings by small Diesel-electric switchers over wood-burning steam locomotives.

The Diesel-electric locomotives bought for meter-gage main-line work by both the Sorocabana and Parana - Santa Catarina systems weigh approximately 141,000 lb. when loaded with supplies for road service. This weight is carried on two three-axle articulated trucks and every axle is motored.

The Diesel engine is of a six-cylinder design, with all cylinders in line, 9-in. bore, 10½-in. stroke, 1,000 r.p.m., four-stroke cycle and solid injection. It is manufactured by the Cooper-Bessemer Corporation, Mt. Vernon, Ohio, and Grove City, Pa. It is mounted on the same base with, and is direct-connected to, a General Electric type GT-571-B1 main generator on which is mounted a belt-driven GMG-146-B4 exciter-auxiliary generator set.

This engine has a manufacturer's rating of 110 hp. per cylinder, or 660 hp. total from which must be subtracted the parasitic loads represented by radiator fan, air compressor and auxiliary generator. There will remain as net input to the generator for traction purposes about 600 hp.

The generator delivers its power output to a total of six GE-747-B1 motors, connected two permanently in series, with three groups in parallel. The motors are of a double-reduction right-angle-drive design that can be applied on the basis of as much as 150 net engine horsepower per motor (traction service) on a gage as narrow as 36 in., or on any wider gage desired, except that it cannot be used on an axle larger than 7-in. in diameter.

Double-Reduction Gearing

The first gear reduction is through a set of hypoid gearing and the second a set of spur gearing. The overall gear ratio is 9.07 to 1.

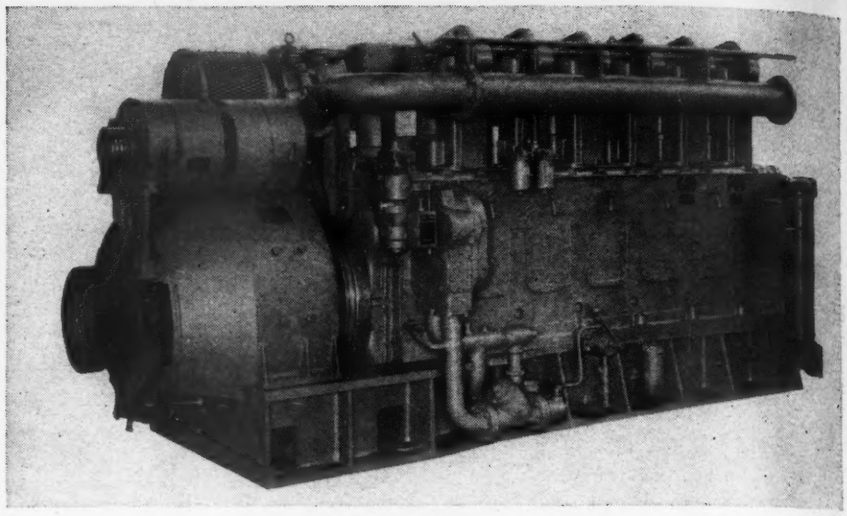
This motor and gear ratio, when applied on 33-in. diameter new wheels, will have a clearance under the gear case to the rail level of 6½ in. and this will be reduced to 5¼ in. as the wheels wear.

The maximum allowable locomotive speed will be 50 m.p.h.

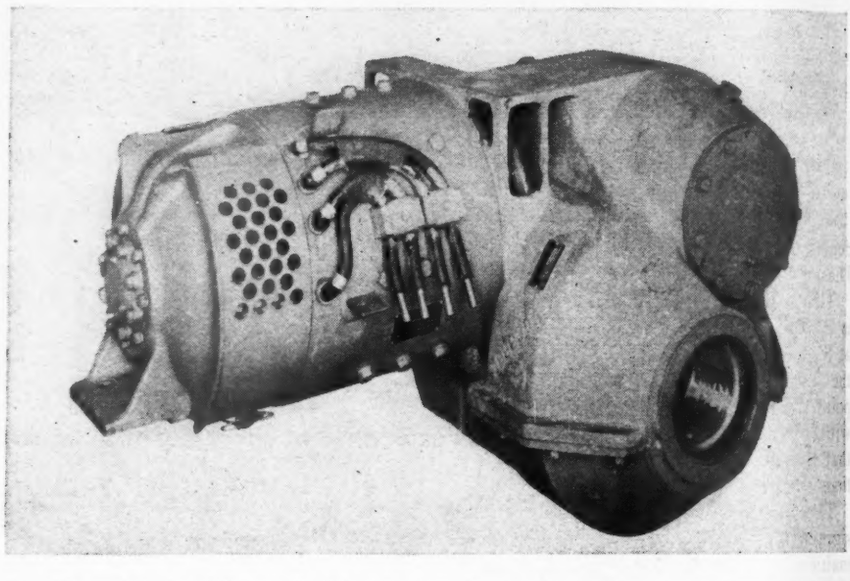
The rigid wheel-base and truck design are such as to permit operation around curves of 164-ft. radius.

The combination of Diesel engine, generator, exciter-auxiliary generator and motors results in a speed-tractive force curve that affords a delivery of at least 480 hp. at the wheel rims at all speeds between 8 and 32 m.p.h.

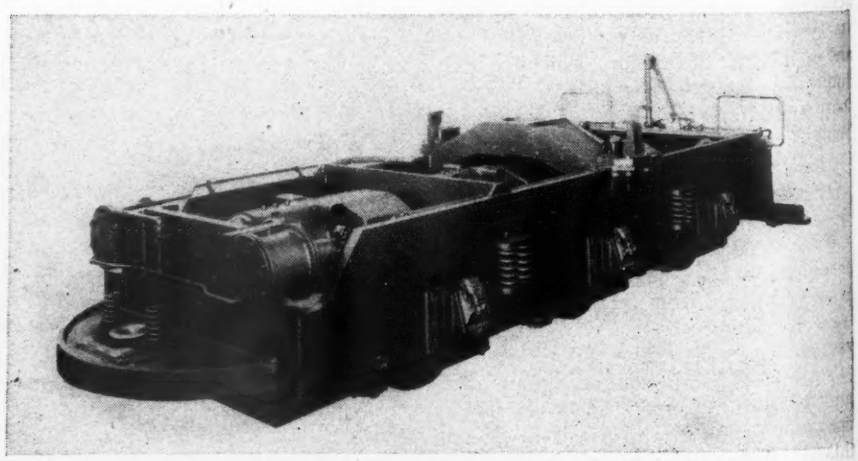
At speeds above 32 m.p.h., the horsepower delivered at the wheel rims begins to diminish because the electrical characteristics of generator, exciter-auxiliary generator and motors limit the horsepower output as the speed goes up, thereby reducing the horsepower



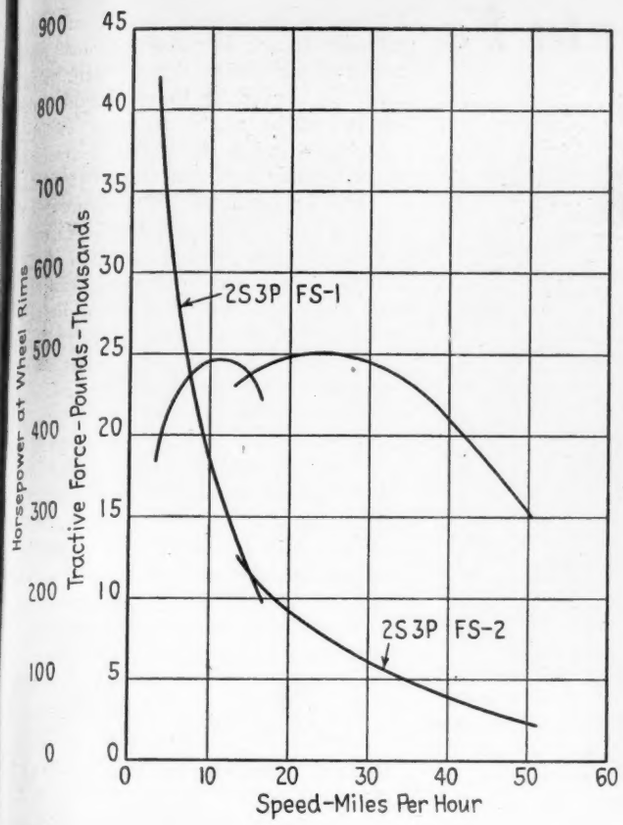
Air inlet side of the power plant



Double reduction right angle drive d.c. traction motor and gear case, type GE-747

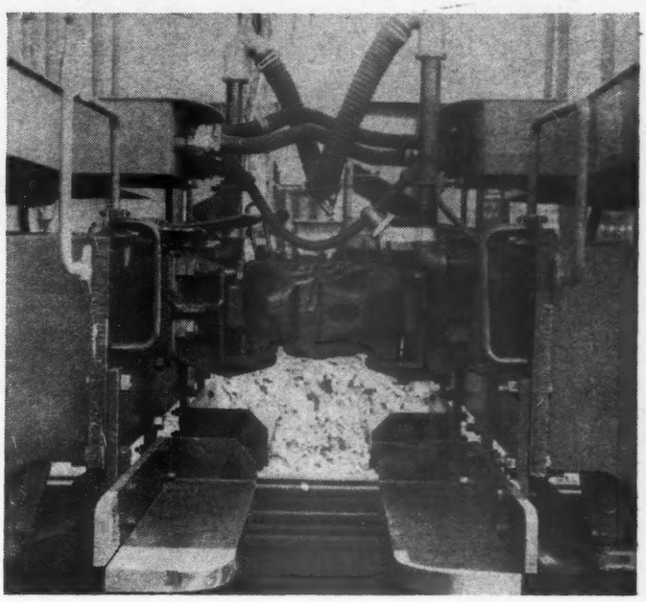


Rear three-axle meter-gage truck showing articulation member, compressed air brake cylinders, center and side bearings, motors and vacuum train brake swan's neck



Left—Tractive force and horsepower (U. S.) at wheel rims plotted against speed based on 600 hp. input to generator with 9.07 to 1 gear ratio and 33-in. wheels

Below—Connections between cab ends of two locomotives arranged to operate in multiple



demanded by the generator from the Diesel engine.

The continuous rating tractive force is 21,900 lb. and this can be delivered at 8¼ m.p.h. In brief, this means that the locomotive is safe from the standpoint of heating of electrical equipment with any condition of load and grade that will allow a speed equal to or higher than 8¼ m.p.h.

The control is of a very rugged design, made simple deliberately to reduce maintenance costs and to give reliability in service. There is no change in motor combinations except to shunt the fields. This results in very simple circuits. The control voltage is obtained from an auxiliary generator. A 32-cell lead-acid battery furnishes the power for starting the engine, and also for lights and control when the engine is not running. A starting winding on the main-generator field provides for its being used as a starting motor.

Pressure and Vacuum Brakes

Each locomotive is equipped with pressure air-brakes for itself as well as with vacuum exhauster and vacuum train-brake valve for the control of vacuum-actuated brakes on the train.

Two locomotives can be connected for multiple-unit operation with the two operating cab ends together. When this is done, the control of traction circuits, sanders and locomotive brakes for both locomotives and the control of the train-vacuum brakes are vested in the particular control position chosen. When two locomotives are thus coupled, the vacuum exhausters on both units are paralleled so that their combined capacity will be available to the engineman in releasing the train brakes and charging the vacuum-brake system.

The necessity of any friction-type draft-gear with a locomotive weighing 141,000 lb. is questionable, but when two such locomotives are coupled together to operate as a single locomotive by multiple-unit control, they really become a 282,000-lb. locomotive and, without question, friction type draft-gear is desirable. Accordingly, the outside ends of such a combination are equipped with draft gear. The cab ends that are coupled together are equipped with bolted engine type pocket couplers.

By making the multiple unit connections at the operating cab ends only, the necessary interconnections are reduced and the locomotive construction simplified.

The characteristics of these locomotives are such that they are good general-purpose locomotives for meter-gage operation. Their average unit axle weight is 23,470 lb. and this weight should allow them to operate successfully on rails weighing 50 lb. per yard or less if the local conditions of ballast, ties, tie-spacing, and operating speeds will allow. The maximum overall height is 12 ft. 1 in., and the maximum width 9 ft.

Cooling air for the engine radiator is drawn into the engine hood through louvers in doors on each side. This air is drawn past the engine, forced through the radiators for both lubricating oil and engine-jacket water cooling, and is then discharged vertically through a hatch, with a sliding cover, the position of which can be adjusted manually to hold the desired engine-jacket temperature given on a thermometer mounted directly in front of the engineman. Drawing in the air from the sides and discharging it vertically allows the locomotive to operate at full power if the ambient temperature does not exceed 100 deg. F. The same degree of cooling will be obtained regardless of direction of operation.

Fuel capacity to the amount of 400 gal. is provided. On the basis of 7.4 lb. per gal. and a consumption of 0.42 lb. per hp.-hr., this will allow full load operation at 50 per cent load factor for about 21 hours, or at 30 per cent load factor for about 35 hours, with no reserve As a general purpose locomotive fueling once in 24 hours should be sufficient, but in the final analysis actual service conditions must determine the frequency of fueling.

Gages showing air pressure and vacuum in the brake systems and instruments showing load on the motors, locomotive speed and battery voltage are mounted to give the engineman this information with a minimum effort on

(*Continued on page 48*)

Advises I.C.C. to Keep Santa Fe Out of St. Louis

Boles-Nye proposed report says new service from Kansas City would be "wasteful and unwarranted," because area now has "no lack of transportation facilities or of competition"

DISAPPROVAL by the Interstate Commerce Commission's Division 4 of arrangements whereby the Atchison, Topeka & Santa Fe would obtain a direct line between Kansas City, Mo., and St. Louis, while the Chicago, Burlington & Quincy would improve its route between those two points and shorten its Chicago-Kansas City route by 22 miles, has been recommended in a proposed report by Assistant Director C. E. Boles of the commission's Bureau of Finance and Examiner A. G. Nye. The arrangements are proposed in a joint Santa Fe-Burlington application and in a Gulf, Mobile & Ohio application for authority to transfer to those two roads the control of the Kansas City, St. Louis & Chicago, which it got in connection with its recent acquisition of the Alton.

The proposed report covers both applications, the title case being Finance Docket No. 15365. Finding generally that "there is no lack of transportation facilities or of competition" in the Kansas City-St. Louis area, Messrs. Boles and Nye conclude that the provision of additional rail service there at this time would be "wasteful and unwarranted." The record indicated that opposition to the proposals centers about the proposed entry of the Santa Fe into St. Louis, and in that connection the report observes that "generally speaking, the gains of the Santa Fe would equal the losses of the protesting railroads and their western connections."

Protesting Roads

While various other railroads have intervened, the principal opposition comes from the Missouri Pacific, St. Louis-San Francisco, St. Louis Southwestern, Chicago, Rock Island & Pacific, and the Texas & Pacific. Messrs. Boles and Nye point out that four of these "have been or are still in the process of reorganization under section 77 of the Bankruptcy Act." The estimates of traffic diversion varied from the Santa Fe's expectation that its gross revenues would be increased by $7,321,791 per year to the expressed fears of protesting roads that they would lose from $17.3 to $21.6 million in annual gross. On this score, Messrs. Boles and Nye choose the middle ground. They say: "Considering all factors that have controlled the routing of traffic shown in the protesting railroads' traffic studies, the amount of revenues on the 1940 basis which they would lose from diversion of carload traffic would probably be not less than $10,000,000 nor more than $12,000,000." In addition, they would lose "considerable revenue" from l.c.l. business and "an indeterminate amount of their passenger train revenues." The Santa Fe and Burlington are found to have shown "no need for the additional revenue" they expect to derive from the proposed new set-up, whereas anything that would threaten the solvency of the reorganization roads among the protestants and thus "frustrate the realization of the objectives" of their revamp plans "would not be consistent with the public interest."

"Should the diversion of traffic to the applicants result in the protesting railroads losing gross freight revenues in the amount of $10,000,000 or $12,000,000 a year, as they probably would, the ability of the latter to earn reasonable fixed charges to finance their future requirements and to serve those areas of the public which are dependent on them for rail transportation would be impaired," the report continues. "While it is the view of expert witnesses that rail freight traffic in a normal postwar year for the nation will be approximately 27 per cent in excess of such traffic in the year 1940, and while there is testimony that rail passenger traffic will be approximately 50 per cent in excess of such traffic in the same year, there is no proof that either the freight or the passenger revenue of the protesting railroads will increase by like percentages. The evidence is to the contrary.

"The lines of the protesting railroads have been particularly susceptible to the competition from other forms of transportation. While the economic growth and industrial development of the territory served by the protesting railroads is continuing, no one can predict with certainty to what extent the traffic or earnings of the protesting railroads will be increased by this growth and development. The temporary lull in the competitive activities of other forms of transportation should not obscure the possible future intensity of such competition, and future development of the territory served by the protesting railroads must be predicated upon resources which are highly susceptible to diversion to competing forms of transportation.

"The bridge traffic of the protesting railroads is not so susceptible to other forms of competition and in future normal years the protesting railroads will doubtless find themselves in need of all the traffic of this character they can obtain. Because of constantly increasing costs of operation and the rapidly approaching limits of what the traffic will bear in increased rates, no one can say with assurance what part of the gross earnings from traffic retained the protesting railroads will be able to show as net railway operating income, or whether that income will be sufficient to maintain their properties, pay their fixed charges, and provide the necessary improvements and render safe, adequate, economical, and efficient transportation service to the public."

Would Passenger Trains Pay?

Passenger services under the proposed new set-up would include three Santa Fe-Burlington jointly-operated through passenger trains daily in each direction between Kansas City and St. Louis. The proposed report says that the joint applicants had not shown that such trains could operate at a profit, while protestants' evidence indicated that the service would be conducted at a loss. Asserting that no need had been shown for these passenger operations by either road, the report goes on to indicate its agreement with protestant contentions that the services "would no doubt be given for the purpose of controlling carload traffic and are connected with the plans of the Santa Fe to divert the more lucrative carload traffic from the protesting railroads." It adds that "dissipation of the earnings of the joint applicants in unnecessary and unprofitable passenger-train and package-car operations and the dissipation of earnings of the St. Louis railroads in their effort to maintain their competitive position . . . would not accord with the national transportation policy."

"The fact that two of the strongest railroads in the United States propose to unite in an arrangement whereby they could control a large volume of traffic and handle it at favorable operating costs would largely inure to their benefit and possibly favor some shippers, but ultimately, because of the power that might be exercised in an area where competition is so keen, the transportation facilities in the entire southwestern section of the country would be adversely affected," the report also says. "Traffic

losses of other carriers . . . unable to compete with such a powerful combination might be so great as to result in curtailment of service or abandonment of substantial portions of their lines, either of which would be detrimental to the public interest. The policy of railroad managements to obtain long hauls over their lines is too pronounced to warrant a finding that the Santa Fe would continue, in the slightest degree, to interchange with other carriers any traffic which it could handle to or from St. Louis. Furthermore, a requirement that the applicants maintain present routes or gateways would not prevent the loss of traffic by other railroads now handling such traffic in connection with the applicants via such routes and gateways."

Details of Plan

As noted in the *Railway Age* of June 29, 1946, page 1278, the applications described the Santa Fe-Burlington-G. M. & O. proposals "in broad outline" as a plan which contemplates joint operation by the Burlington and Santa Fe between Kansas City and St. Louis over the so-called Burlington-Alton joint line. That line extends eastward from Kansas City through Higginsville, Mexico, Francis, and Old Monroe to St. Louis, and would thus give the Santa Fe a direct Kansas City-St. Louis route.

The proposal to take over the Kansas City, St. Louis & Chicago from the G. M. & O. contemplates that the Santa Fe and Burlington would control that property jointly and assume the former Alton lease on it. Use of the K. C. St. L. & C. would take the Santa Fe from Rock Creek Junction, near Kansas City, to Mexico, 156 miles on its way to St. Louis. Trackage rights (extending also to the Burlington) obtained from the G. M. & O. (as lessee of the Louisiana & Missouri River) over 2.5 miles between Mexico and Francis would provide the connection with the Burlington's 112-mile line from the latter point to St. Louis, over which the Santa Fe would also get trackage rights. Additional trackage arrangements with the Burlington and Kansas City Terminal would round out the route at that end, while the St. Louis entry would be perfected by arrangements for operation into the Union Station there over tracks of the Terminal Railroad Association.

The phase which involves shortening the Burlington's Kansas City-Chicago route by 22 miles contemplates that road's operation under trackage rights over the Santa Fe's 104-mile line between Bucklin, Mo., and Sheffield, a point near Kansas City, including the right to use the Carrollton-Camden Junction section of the line where single tracks of the Santa Fe and Wabash have been paired for double-track operations. In transferring the lease of the K. C. St. L. & C. to the Santa Fe and Burlington, the G. M. & O. would reserve trackage rights for its freight service over the lessor's 156-mile line between Rock Creek Junction and Mexico, and the "exclusive right" to use all K. C. St. L. & C. facilities west of Rock Creek Junction, except that the Santa Fe and Burlington would have the right to operate over an 0.88-mile connection between tracks of the Kansas City Terminal over which their joint plan contemplates that they will have trackage rights.

The report notes that the applicants had emphasized that all of these proposed transactions "are interrelated and indivisible in character, and consummation of any part of the plan depends upon approval of the plan in its entirety." While Messrs. Boles and Nye say that a consideration of some of the proposals apart from the plan as a whole "might warrant the commission's approval," they reach their adverse findings when they meet the applicants' request for consideration of the transactions collectively.

Models Presented to Smithsonian

The Smithsonian Institution added to its railroadiana on October 31 when it accepted from Gustav Metzman, New York Central president, models of the "Empire State Express."

A model of the original train consists of miniatures of the four cars and the famed locomotive "999" which made the first run. The model of the present day train, which went into service in 1941, consists of six stainless steel streamlined cars and a streamlined Hudson-type steam locomotive. A model of a two-unit Diesel-electric which succeeded the steam locomotive also was presented to the institution.

Pictured above are Mr. Metzman (left) and Alexander Wetmore, secretary of the Smithsonian Institution and director of the National Museum, who accepted the models.

Securities Selling Far Below Par

(*Continued from page 32*)

gallons in the first eight months of 1940 to 498,665,000 gallons in the comparable period this year. The quantity of coal purchased f.o.b. mines was up 25.7 per cent—from 56,967,000 tons to 76,611,000 tons.

The total fuel bill of the Class I roads for the 1947 period was $419.9 million as compared with $169.9 million in 1940, an increase of 147.2 per cent. In the first eight months of 1940, coal accounted for 68.9 per cent of the total fuel cost, as compared with 62.41 per cent in the same period of this year. Meanwhile, the Diesel fuel proportion increased from 1.33 per cent to 8.19 per cent, while the proportion spent for fuel oil rose from 20.62 per cent to 23.8 per cent.

In commenting on its recent statement showing salaries of railroad officers in 1946 (see *Railway Age* of November 8, page 60), the bureau presented a comparison (which was not in the statement) of trends of executive salaries with those of all other employees. On

the basis of 1940 as 100, the table showed a 1946 index figure of 101 for the average salary of executives receiving $10,000 or more annually. This compared with an index of 162 for employees other than those in the "executives, officials and staff assistants" classification.

The bureau's usual analysis of the latest revenue results showed that the September freight revenue on a daily basis was 0.6 per cent below August but 15 per cent above September, 1946, "without adjustment for the difference in the number of Sundays." Passenger revenues were down 11.7 per cent from the previous month and 15.7 per cent under September, 1946. The September freight revenue index (based on the 1935-39 monthly average as 100) was 228.3 for September, compared with August's 229.6 and September, 1946's 205.1. The passenger revenue index at 237.1 compared with August's 268.4 and September, 1946's 281.3.

The net railway operating income for the 12 months ended with September was $810,210,000 and the net income was $499,651,000. These compared, respectively, with $437,901,000 and $80,619,000 for the 12 months ended with September, 1946, and $1,040,535,000 and $639,865,000 for the 12 months ended with September, 1945.

Brazil Adds Diesels

(*Continued from page 45*)

his part. Switches controlling headlights and other local lighting functions are equally convenient.

Fabricated Structural Parts

The mechanical parts of these locomotives have been built entirely of rolled-steel plate and shapes, except for such specialties as couplers, brake-cylinders, bells, and other items where castings are still accepted as good design. The rolled-steel plates and shapes have been welded together by electric welding, automatic or hand. This construction results in a strong homogeneous structure.

Heavy channel and I-beam sections appear under the cab floor for the support of the engine-generator set and solid rolled-steel plates, flame-cut to shape, form the side frames of the trucks. The bridge-type support for the center plate is completely fabricated of rolled-steel plate, electrically welded, and several welds are evident in connection with the structure carrying the articulating hinge where it joins the truck. The transverse cross-sectional dimensions were chosen after an extensive study of a multiplicity of clearance diagrams of meter-gage railroads from various parts of the western hemisphere.

Besides the application to meter gage, the design of the locomotive can be altered easily so that new locomotives can be built for 36-in. or 42-in. gage within the same general overall dimensions. The principal changes will be in gage of wheels, truck transoms, brake beams and brake rigging. The locomotive lends itself easily to repetitive manufacture.

COMMUNICATIONS . . .

Would Make Stock Senior to Bonds

NEW YORK

TO THE EDITOR:

You printed not long ago a communication from me advocating the discontinuance of the word stockholders and substituting the word stockowners. I am also advocating the discontinuance of the word equity and the substitution of the word investment. There is no existing thing as the equity which is merely the supposed value at a given time. The investment is permanent and should be protected first ahead of everything, including wages, taxes and interest on the debt (bonds), as it is the investment which provides all the others.

WILLIAM A. DUREN

A Woman Traveler Likes Japan's Railroads

c/o POSTMASTER, SAN FRANCISCO

TO THE EDITOR:

A war job gave me a lot of traveling experience in the States. Every traveler has his pet gripe, but the one shared by all travelers is the upper berth as it is. People generally dread the old upper berth, not because it is uncomfortable, but because once they are up, there they are, and during the night, no amount of pleading or ringing will produce the heavily slumbering porter with the much needed ladder. There you are, stranded! The company says you mustn't jump, and you don't quite have the nerve to use the guy in the lower berth as a ladder.

I have spent many unhappy hours in an upper berth speculating as to why the railroad company couldn't provide a canvas ladder permanently attached to the upper berth so that the misused customer could use it at will. Much to my delight, when I got to Japan I found that the Japanese railroad companies had not only thought of it, but very happily produced it. There it was, your own little ladder, permanently attached to your berth; you could scramble up and down it at will with never a thought for the haughty porter who has absolutely no sympathy with your need, or desire, to descend once you are up.

As a woman traveling alone, another little thing that I always wanted was a "women's car." Many is the night that I have been kept awake by a group of playful drunks, when all I wanted to do was sleep. Or at the last moment you forgot to pack your robe, and you can't very well go to the dressing-room in a nightie because there are men all over the place. So you have to get re-dressed. In Japan the Army has provided separate cars for women traveling alone. It's wonderful! You can dress and undress comfortably with the curtains open. If it is a hot night, you can leave them open all night. Why can't some of the American crack trains put on an "all women's car"? They might be surprised how happy they would make some of their women customers.

One final little touch that Japanese railways provide is music over the loud-speakers at small stations. As the train pulls out of the station, the sweet strains of "Tales of Vienna Woods" follow to cheer the traveler on his way.

BENA B. GREENE

Car Supply for Movement of Grain

BALTIMORE, MD.

TO THE EDITOR:

Your issue of September 27 included a letter from David P. Morgan, of Taft, Texas, which refers to the current high demand by farmers for boxcars for the transportation of grain, and states:

"Their natural attitude is this: 'Why should we erect grain storage depots? Is it not the duty of the railroads to always supply enough cars at the right time at the right location?' What is the answer to that question?"

The answer to the question is succinctly stated in a standard work entitled "Principles of Railway Transportation," by Eliot Jones, as follows:

"The question may be raised whether the railroads should be expected to have at all times a supply of cars adequate to take care of the demand. The answer we believe, is in the negative. Business, as is well recognized, moves in cycles; and the demand for cars fluctuates correspondingly. If the railroads are to avoid car shortages entirely in periods of unusual prosperity, they will have huge car surpluses in periods of reduced activity. Car surpluses mean, of course, that capital is tied up in an investment that brings in no return, and the economic loss thus sustained will as a rule be borne by the public, in the form of higher rates. The law therefore wisely recognizes that the obligation of a railroad to provide cars is merely an obligation to provide enough to take care of normal requirements. For example, the railroads can not be expected to have enough coal cars to move the year's supply of coal when . . . a coal strike lasting over four months compels the railroads to hold approximately half their coal equipment in idleness. Neither can they fairly be expected to have sufficient cars to move the grain crop with no shortage whatsoever, in view of the fact that the greater part of the crop is delivered to them within a comparatively few weeks."

FREDERICK W. DOOLITTLE, JR.

GENERAL NEWS

Urges Research to Protect Resources

Railroads must get increased service life from their materials, says Akers

The need for further and more intensive research and development aimed at getting more service life from the materials used by the railroads, thereby producing economies for the carriers as well as conserving the country's natural resources, is pictured by J. B. Akers, chief engineer of the Southern, in an address on November 12 before a meeting of the New England Railroad Club at Boston, Mass. Stating that the railroads and their suppliers will have to press their own research programs, Mr. Akers "wondered why it would not be practicable to initiate a sort of 'Nobel prize' for those individuals who contribute to outstanding research and consequent development in steel, timber, or any other materials or equipment; or for one who is responsible for an outstanding and important advance in operating methods."

Pointing to the present rapid growth that is taking place in the population of the country, Mr. Akers said that "it is our job to produce and maintain a transportation plant that will take care" of this growth and the expansion of industry. As far as the physical properties are concerned, he said, the necessary "improvements can be brought about only through research and development—and conservation." He then spoke of the depletion that has occurred in the natural resources of the country, such as timber and iron ore, illustrating this point by saying that in the South, where there were formerly vast forests of longleaf yellow pine, it has been necessary for the past ten years to depend on fir from the West coast for a growing proportion of the bridge and trestle timber needed and that "now the veneer people are claiming the best fir logs."

More Service Life Needed—While the service life of some of the products of our natural resources has been increased, said Mr. Akers, further progress must be made, and the work must be done or sponsored by those who have a stake in the problem, such as the various railroad associations. As an example of the problems yet to be solved he cited that presented by shelly rails. He expressed confidence that not only would this problem be solved but also "that the steel industry can improve rail steel for greater durability."

Continuing on the subject of rail, Mr. Akers said that "there is economy in the use of the larger rails where traffic is sufficient to justify them." Referring to a recent study he made to demonstrate the economy of such rails, Mr. Akers said that, with an average traffic of 16 million tons, the increased cost of 131-lb. rail over 100-lb. rail would be saved in about 3¼ years. But even when such rail has reached the end of its service life, he said, it is seldom "worn out" but has to be removed because of surface damage and wear at the joints. He is confident that a solution will be found to this problem. "An increase of 5 per cent, or of 5 years, in the service life of steel rail would represent enormous conservation of natural resources, running back even to the ore beds," he said.

The Crosstie Situation—Mr. Akers also dwelt at length on the problem presented by the checking, splitting and mechanical wear of wood crossties. While great progress has been made in protecting crossties against decay, he said, little has been done to increase the resistance of such ties to checking, splitting or mechanical damage. As an example of a step in this

(*Continued on page 52*)

Three Op Unions to Issue Strike Ballot

Enginemen and firemen represented by the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Firemen and Enginemen, and those switchmen represented by the Switchmen's Union of North America, will receive strike ballots on their current wage increase and rules change demands, union spokesmen announced at Chicago on November 19.

The carriers offered these three operating brotherhoods a 15½-cent hourly pay increase and a rules settlement similar to that just accepted by the trainmen and conductors. The engineers', firemen's, and switchmen's representatives stated that this settlement was "wholly unsatisfactory" to them. They declined to invoke jointly with the railroads the services of the National Mediation Board, whereupon the carrier representatives withdrew their offer and announced their intention to request the services of the Mediation Board, in accordance with the provisions of the Railway Labor Act.

Railroad spokesmen expressed surprise and disappointment at the refusal of these three unions to accept the settlement tendered them, and at their action in taking a strike vote while negotiations were still in progress.

Two Op Brotherhoods Settle on Wages, Rules

Trainmen and conductors get 15½-cent pay increase, four rule changes

Representatives of the Brotherhood of Railroad Trainmen and the Order of Railway Conductors, respectively, reached almost complete accord with representatives of the carriers on the pending wage increase and rule change cases at 4 a.m. on November 14, at Chicago. Settlement was reached on (1) a 15½-cent-an-hour pay increase, retroactive to November 1, and (2) four changes in working rules, effective January 1, 1948, for some 200,000 members of the two organizations. There yet remain for settlement with these two brotherhoods four labor-proposed and seven carrier-proposed rule changes, upon which negotiations are continuing at Chicago. The pay increase of 15½ cents hourly is the same as that granted to the non-operating railroad men, effective on September 2, by an arbitration board.

The unions originally sought a 30 per cent wage increase—which, for the conductors and trainmen alone, would have cost $250,000,000 a year, according to an estimate agreed upon by both parties—and 44 changes in working rules. The 15½ cents-an-hour settlement for the two brotherhoods is estimated to cost the carriers $100,000,000 a year, and, according to spokesmen, is a final settlement so far as the wage increase is concerned.

Of the original 44 rule changes proposed by the unions, four were agreed upon in whole or in part, 36 dropped entirely, and four continued in negotiation. (These proposals were outlined in *Railway Age* of August 2, page 36.) Of the 25 counter-proposals presented by the carriers, 18 were dropped entirely, and the handling of seven continues.

Rules Settlement—The four rule changes which were agreed upon—none of which fall into the "featherbed" category—include the following:

Differential for Yard Conductors (Foremen)—The basic daily rate for yard conductors (foremen) shall be not less than 85 cents more than the basic daily rate for yard trainmen. (Existing differential is currently 52 cents on most roads. The brotherhoods asked for a difference of $1.50.)

Held Away from Home Terminal—Payments for time held at other than home terminal shall be separate from payments for subsequent service. (Existing practice permits carriers to offset time paid for while

P. R. R. Future Looks Good, Says J. M. Symes

The Pennsylvania has turned the corner as far as revenues and control over costs are concerned, James M. Symes, vice-president in charge of operations, said in New York on November 13. Despite many uncertainties in the situation, he added, the outlook for the road is good because of the expected further increase in freight rates and the delivery of additional modern equipment.

During the past year much has been done toward getting every operating division on a profitable basis, Mr. Symes continued. Last year the road's passenger traffic business resulted in a loss. Since October, 1946, however, several unprofitable trains have been eliminated, as a result of which the Pennsylvania has reduced its daily passenger-train miles by 25,000, or 17 per cent. Practically all this reduction was on branch line operation which, with some additional reduction and the delivery of new passenger cars, should soon be placed on a profitable basis.

An attempt is being made, he said, to place the movement of less-than-carload freight in the category of a profit-making service. New cars have been designed especially for this class of freight and authority to charge higher rates, particularly on the short-haul movement, which has been the most unprofitable, has been requested. Mr. Symes said it was a possibility that the higher rates might divert a large part of l. c. l. traffic to the highways.

He estimated that deferred maintenance on the Pennsylvania had accumulated to the extent of $75,000,000 to $100,000,000, mainly because of the inability to procure materials, supplies and labor during the war years. Each year the road normally lays about 110,000 tons of new rails, but during the war this figure had fallen to 75,000 tons a year, thus necessitating the laying of about 145,000 tons of rails each year for the next four or five years, if the road is to catch up.

held away from home terminal with subsequent assignment.)

Short Turn-around Passenger Service—Time on duty, or held for duty, in excess of 8 within 9 consecutive hours shall be paid for at overtime rates. (Rule presently provides for overtime after 8 within 10 hours. Employees sought overtime after 6 within 8 hours.)

Minimum Guarantee to Yardmen—Yard conductors, brakemen and switchtenders shall have guaranteed earnings from straight and overtime for each day of service of not less than 20 cents per day above the basic daily rate. (The effect of this rule is to guarantee earnings of 20 cents in excess of the basic daily rate for yardmen when overtime payments do not accrue, or do not equal that amount.) The resulting minimum daily pay is, for yard conductors, $12.31; for yard brakemen, $11.46; and for switchtenders, $9.91.

Program of A.S.M.E. Annual Meeting

The program for the Railroad Division sessions at the Annual Meeting of the American Society of Mechanical Engineers to be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., December 1-5, inclusive, as revised since the tentative program appeared in the November 8 issue of the *Railway Age*, appears below. Included also are other sessions of more or less direct railroad interest.

Tuesday, December 2

9:30 a.m.

RAILROAD (I) — METALS ENGINEERING

Construction and Maintenance of Railroad Equipment by Submerged and Gas-Shielded Electric Welding, by Norman G. Schreiner, manager, Unionmelt Service and Development, Linde Air Products Company.

Notes on the Design and Construction of Stay-bolted Locomotive Fireboxes, by Fred P. Huston, charge of railroad development, development and research department, International Nickel Company.

OIL AND GAS POWER (I)

Problems Associated with the Use of Diesel Fuel Oil, by W. L. H. Doyle, assistant director of research, and E. W. Landen, Caterpillar Tractor Company.

Removal of Aldehydes from Diesel Exhaust Gas, by Rogers F. Davis and M. A. Elliott, assistant division chief, U. S. Bureau of Mines, Pittsburgh, Pa.

MATERIALS HANDLING (I)

Handling Equipment at Railroad Terminals and Shops, by Daniel Polderman, vice-president, Whiting Corporation.

Materials Handling Methods and the Application of Incentive Compensation, by H. B. Shaw, staff engineer, Methods Engineering Council.

2:30 p.m.

FUELS (I)

Symposium on Improving the Availability of Steam Motive Power

Regional Standards for Locomotive Fuels, by E. C. Payne, consulting engineer, Pittsburgh Consolidation Coal Company.

Locomotive Firebox and Boiler Performance, by F. D. Mosher, research engineer, Standard Stoker Company.

Better Locomotive Servicing Facilities on the Norfolk & Western, by C. E. Pond, assistant to superintendent motive power, N. & W.

Intensive Utilization of Coal-Fired Steam Locomotives, by E. L. Johnson, assistant chief engineer motive power and rolling stock, New York Central System.

Developments and Trends in Coal-Burning Locomotives, by Charles Kerr, Jr., consulting transportation engineer, Westinghouse Electric Corporation.

Wednesday, December 3

9:30 a.m.

RAILROAD (II)

Report on Railway Mechanical Engineering, by T. F. Perkinson, manager, railroad rolling stock division, General Electric Company.

Forum: Locomotive Development

Forum leader: C. E. Pond, assistant to superintendent motive power, Norfolk & Western.

Speakers: John S. Newton, assistant manager, engineering, steam division, Westinghouse Electric Corporation; J. F. Griffin, chief engineer, Superheater Company; C. D. Stewart, vice-president, Westinghouse Air Brake Company.

The South African Railways from a Mechanical Engineer's Aspect, by M. M. Loubser, chief mechanical engineer, South African Railways.

Other speakers: John I. Yellott, director of research, Locomotive Development Committee; Walter Giger, steam turbine department, Allis-Chalmers Manufacturing Company; A. J. Townsend, vice-president, Lima Locomotive Works.

The Turbine Locomotive and Transmission Systems, by Rupen Eksergian, vice-president, Budd Company.

2 p.m.

RAILROAD (III)

Continuation of Locomotive Developments Forum

6:30 p.m.

Annual banquet.

Thursday, December 4

9:30 a.m.

GAS TURBINE POWER (IV) — HYDRAULIC (III) — OIL AND GAS POWER (V) — AVIATION (I)

Analysis of Compressor Design, by A. J. Jadot, administrator de la faculte, Polytechnique de Mons, Belgium.

Axial Flow Compressors for Gas Turbines, by A. I. Ponomareff, manager, Westinghouse Electric Corporation.

A Method of Correlating Axial Flow Compressor Cascade Data, by Hunt Davis, division engineer, Elliott Company.

RAILROAD (IV)

9:30 a.m.

Forum: Freight-Car Construction

Forum leader: J. D. Loftis, chief motive power and equipment, Atlantic Coast Line.

Speakers: A. F. Stuebing, assistant to manager of sales, Carnegie-Illinois Steel Company; S. M. Felton, president, American Railway Car Institute; E. A. Sipp, manager, Reynolds Metals Company; L. K. Sillcox, first vice-president, New York Air Brake Company; George A. Suckfield, consulting engineer, Pressed Steel Car Company; G. B. Hauser, assistant chief engineer, railroad division, Aluminum Company of America; M. S. Downes, assistant general manager, Railway Division, Timken Roller Bearing Company, and R. B. Cottrell, chief mechanical engineer, American Steel Foundries.

FUELS (IV)

Furnaces for By-Product Fuels, by Otto de Lorenzi, director of education, Combustion Engineering Company.

Experimental Combustion of Pulverized Coal at Atmospheric and Elevated Pressures, by H. R. Hazard, research engineer, fuels division, Battelle Memorial Institute, and F. D. Buckley, engineer, Locomotive Development Committee.

2 p.m.

RAILROAD (V)

Continuation of Freight-Car Construction Forum

Friday, December 5

9:30 a.m.

Citizenship

Roundtable discussion: Stimulating the Engineer's Participation as a Citizen.

At the banquet on Wednesday evening, December 3, the Society will confer its honors and awards on engineers who have made significant contributions to the engineering profession. Among those to be so honored will be Paul W. Kiefer, chief engineer motive power and rolling stock, New York Central System, who will receive the A. S. M. E. Medal; Arpad L. Nadai, consulting mechanical engineer, Westinghouse Research Laboratories, who will receive the Warner Medal; and Raymond C. Martinelli, General Electric Company, who will receive the Melville Medal.

B. & O. Outlay of $250,000,000 Needed Over Next 10 Years

The Baltimore & Ohio should spend more than $250,000,000 for major improvements and new equipment during the next five to ten years to meet the growing demand for improved and modernized rail transportation service, R. B. White, president, reported to the road's stockholders at the annual meeting in Baltimore, Md., on November 17. However, he added, present net earnings of the B. & O., as well as of railroads in general, are too low to attract the new capital required for such improvements.

"The railroad industry is now confronted with two great opposing forces," Mr. White said. "On the one hand we have been faced with a constantly mounting expense level, the principal item of which is wages. On the other hand we have the growing demand of the public for improved freight and passenger service. We believe the public is entitled to such transportation and the railroad industry should provide it, but it cannot do so unless it has a level of revenues which will meet the cost of service and yield

a reasonable and fair return on invested capital."

In spite of the greatest volume of rail traffic in the history of the nation, he pointed out, the margin between income and outgo in the railroad industry is less than half of the 6 per cent the Supreme Court has held to be a fair and reasonable return for regulated utilities. Although the B. & O.'s net income of more than $6,000,000 for the first 10 months of 1947 is likely to be increased somewhat during the rest of the year, after all expenses and other obligations have been met "the return for the year is plainly inadequate to sustain necessary credit and to provide a dividend to owners of the property. To correct this inadequacy, assuming no further heavy increases in operating costs and taxes. . . we hope the Interstate Commerce Commission will authorize promptly the full increase in rates sought in our application."

Mr. White said expenditures for road improvements during the current year will total about $19,000,000. In addition, during the two years since the end of the war the B. & O. has placed orders for some $90,500,000 worth of new rolling stock and marine equipment necessitating a cash outlay this year of more than $10,000,000. Since 1940 the road has ordered over 25,000 freight cars, of which more than 20,000 have been delivered. Since the end of the war, 13,393 hopper cars have been ordered and 7,984 of them have been delivered. During the last 12 months, 105 industries of major importance have been built, or have started construction, along B. & O. lines, promising substantial addition to the road's revenues.

"Friendship Train" Ends Run

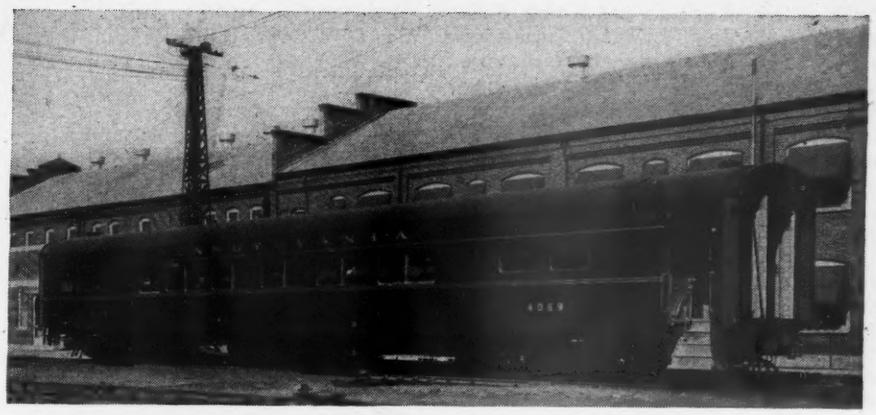
The original 12-car "Friendship Train" which departed from Los Angeles, Cal., on November 7 had increased to 82 cars upon its arrival at Chicago on November 14. Governor Dwight H. Green of Illinois and Chicago's Mayor Martin H. Kennelly participated in welcoming ceremonies attended by several thousand persons at the Chicago & North Western station. Forty cars were added to the train prior to its departure from that city in two sections on November 15. One section of 63 cars proceeded East via the Pennsylvania and another section of 59 cars departed over the New York Central. There were 214 cars in the trains when they arrived at New York.

P. R. R. Accepting Delivery of "Trail Blazer" Coaches

The Pennsylvania is accepting delivery from the American Car & Foundry Co. of a new series of 21 passenger cars to be known as the "Trail Blazer" coaches. The car exteriors are painted the usual Tuscan red and the interiors are finished in three alternating color schemes: red, blue or green. Ceilings are in a lighter tone than the prevailing color used in the upholstery. The baggage racks are finished in white enamel; piers and bulkheads are in stone gray; and the passageways are in plum color. Buff-finished, anodyzed aluminum trim will be used throughout the cars, while the curtains will be rose-colored.

General illumination will be provided by a continuous fluorescent system operating over and under the baggage racks. Fluorescent fixtures are also located in the lounges and passageways. Two lounge compartments are available in each car, one for men and one for women. Each lounge compartment contains three washstands, a leather-covered sofa, a dental bowl and the usual toilet facilities.

A public address system of the high level type has been provided, consisting of a single channel train line with a loudspeaker located on the bulkheads at each end of the cars. The air-conditioning system is of the electro-mechanical type, with modulated cooling and heating control.



Exterior of new "Trail Blazer" Coach built by American Car & Foundry

Spacious lounge compartments are features of the new coaches

Young Railroaders' Conference on Boston & Maine

The Second Annual Young Railroaders' Conference, sponsored by the Boston & Maine System Council of Y. M. C. A.'s, was held in Charlestown, Mass., during the week-end, November 15-16. The fifty young men assembled from different departments over the system, and including two guests from the Boston & Albany, had returned questionnaires previous to the conference, indicating the particular subjects in which they were interested and giving data as to their occupation, educational background, etc. The purpose of the conference was to help each individual to a better appreciation of the opportunities on the railroad and assist him in finding that place in the organization for which he is best fitted, with helpful suggestions as to how he may better prepare himself for advancement.

The conference opened with a banquet on Saturday evening, which was featured with an address on the Young Railroad Men's Place in Tomorrow's World, by Dr. Harry M. Doyle of Harvard University. Following this was a discussion period presided over by John P. McGrail, Massachusetts state supervisor of education, who has been closely associated with the Boston & Maine on this project and the educational courses on human and industrial relations. A panel of railroad officers and labor union representatives answered questions from the young men who were encouraged to express their needs and opinions frankly—and this they surely did.

On the following day a conference luncheon was held, presided over by A. J. Perry, Sr., general chairman, International Association of Machinists. After an ad-

dress on New Horizons for Young Railroad Men, by Roy V. Wright, managing editor of the *Railway Age*, the conference was divided into small groups of four or five young men, according to their occupations and special interests. Railroad officers and labor union representatives acted as counsellors for these small groups. The young men thus had the opportunity to present their personal problems quite frankly, and were advised by the practical railroad men, to the best of their ability, as to what steps they might take to improve their opportunities. The counsellors, in their reports to the conference leaders, will make definite recommendations as to such follow-ups as may seem advisable in each specific case.

The conference chairman was F. W. Rourke, general manager of the Boston & Maine. Frank M. Warner, of the Transportation Department, National Council of the Y. M. C. A., had charge of the musical program, which was characterized by the singing of appropriate folklore songs.

Urges Research to Protect Resources

(*Continued from page 49*)

direction he referred to a process "for drying out an oak tie in seven or eight hours as compared with the usual 15 months in the seasoning yard, and doing it with little or no damage to the wood." Saying that the crushing or plate-cutting of the ties "is an enormous drain," Mr. Akers described the proposed research program of the National Lumber Manufacturers Association, which is designed to find a solution to this problem as well as that presented by splitting and checking. Mr. Akers was confident that the funds required to carry out this program would be well spent. "The five-year program, if that is all it takes, will cost some $225,000, which is the practical equivalent of 75,000 or 100,000 treated crossties."

Freight Car Loadings

Revenue carloadings for the week ended November 15, which included Armistice Day, totaled 878,337 cars, the Association of American Railroads announced on November 20. This was a decrease of 31,823 cars, or 3.5 per cent, under the previous week, a decrease of 38,787 cars, or 4.2 per cent, under the corresponding week last year and an increase of 77,803 cars, or 9.7 per cent, above the comparable 1945 week.

Loadings of revenue freight for the week ended November 8 totalled 910,160 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, November 8

District	1947	1946	1945
Eastern	165,673	172,626	157,222
Allegheny	187,565	194,033	179,120
Pocahontas	72,809	68,440	57,762
Southern	136,420	141,715	128,074
Northwestern	128,202	134,237	112,272
Central Western	147,669	138,321	136,971
Southwestern	71,822	63,973	66,797
Total Western Districts	347,693	336,531	316,040
Total All Roads	910,160	913,345	838,218
Commodities:			
Grain and grain products	49,556	49,424	57,340
Livestock	20,164	23,876	25,954
Coal	191,475	188,788	183,684
Coke	15,054	14,009	12,543
Forest products	45,475	46,256	33,726
Ore	55,868	58,279	42,143
Merchandise l.c.l.	121,437	130,874	116,493
Miscellaneous	411,131	401,839	366,335
November 8	910,160	913,345	838,218
November 1	940,746	922,312	851,962
October 25	954,627	942,257	854,779
October 18	954,249	931,766	773,807
October 11	956,862	899,443	754,559
Cumulative total, 45 weeks	38,765,767	35,934,663	36,855,464

Loadings of revenue freight for the week ended November 1 totaled 940,746 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, November 1

District	1947	1946	1945
Eastern	167,361	169,579	151,877
Allegheny	194,706	191,998	174,873
Pocahontas	75,758	69,115	64,945
Southern	142,109	142,994	133,665
Northwestern	137,850	135,888	124,945
Central Western	150,722	146,232	135,675
Southwestern	72,240	66,506	65,982
Total Western Districts	360,812	348,626	326,602
Total All Roads	940,746	922,312	851,962
Commodities:			
Grain and grain products	52,064	52,165	59,070
Livestock	21,678	25,354	27,830
Coal	187,909	182,235	180,686
Coke	14,610	13,819	11,688
Forest products	48,591	46,804	36,069
Ore	62,208	58,457	51,562
Merchandise l.c.l.	123,258	130,773	116,255
Miscellaneous	430,428	412,705	368,802
November 1	940,746	922,312	851,962
October 25	954,627	942,257	854,779
October 18	954,249	931,766	773,807
October 11	956,862	899,443	754,559
October 4	942,533	907,168	768,040
Cumulative total, 43 weeks	37,855,607	35,021,318	36,017,246

In Canada. — Carloadings for the week ended November 1 totaled 89,788 cars as compared with 88,889 cars for the previous week and 83,633 cars for the corresponding week last year according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
November 1, 1947	89,788	39,654
November 2, 1946	83,633	37,463
Cumulative totals for Canada:		
November 1, 1947	3,314,378	1,619,049
November 2, 1946	3,085,779	1,511,179

Canadian carloadings for the week ended November 8 totaled 86,757 cars as compared with 89,788 cars for the previous week and 84,748 cars for the corresponding week last year, according to the bureau.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
November 8, 1947	86,757	39,238
November 9, 1946	84,748	37,375
Cumulative totals for Canada:		
November 8, 1947	3,401,135	1,658,287
November 9, 1946	3,170,527	1,548,554

M.-K.-T. Says M. P. Monopolizes San Antonio-Laredo Line

Raymond J. Morfa, chairman of the board of directors of the Missouri-Kansas-Texas, last week charged the Missouri Pacific with maintaining a "stranglehold" on the 150-mi. Texas link-line between San Antonio, Tex., and Laredo, thereby preventing other southwestern roads from offering through service to Mexico City, Mex. In a statement issued to the press, Mr. Morfa asserted that "the obstinacy of Missouri Pacific officials is preventing the Katy from giving its patrons through car service from Kansas City, Mo., Dallas, Tex., and intermediate points to the Mexican capital."

The Katy's board chairman said that he proposed to install through sleeping cars which would originate in Kansas City and travel via the Katy lines to San Antonio, from which point they would be handled by the M. P. over its line to Laredo. The cars would then be transferred to the National of Mexico for the journey to Mexico City. Mr. Morfa pointed out that through cars from New York to Mexico City are operated over the San Antonio-Laredo route by the M. P. in cooperation with the Pennsylvania, New York Central, Texas & Pacific and the National of Mexico.

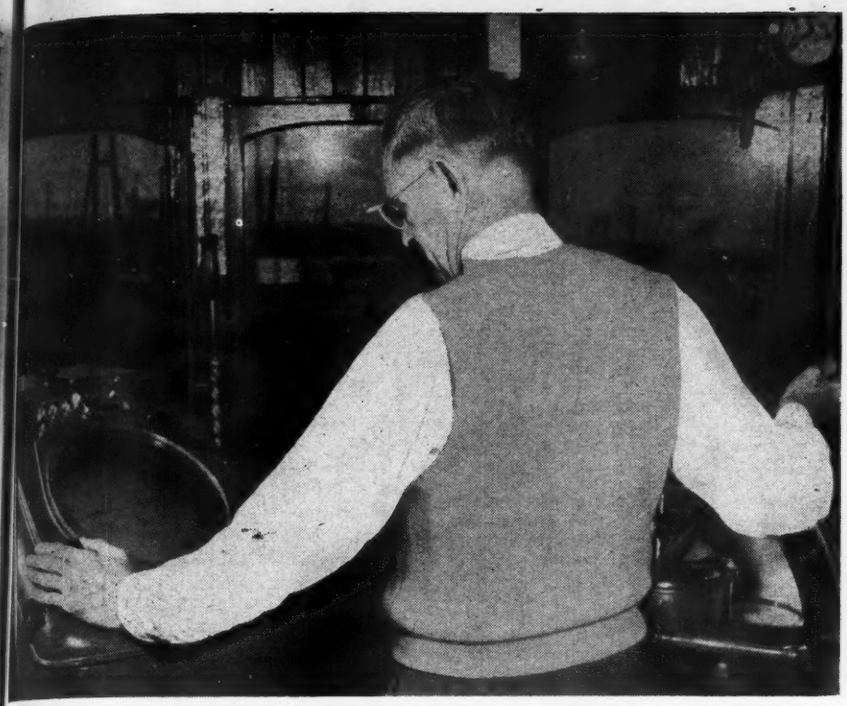
"It would only be following common practice and extending common courtesy for the M. P. to pick up our cars at San Antonio," Mr. Morfa declared. "The M.-K.-T. would not be taking a nickel's worth of business away from the M. P. at either Kansas City or Dallas."

Mr. Morfa asserted that passengers from Kansas City or Dallas can not now go by rail to Mexico City without changing both trains and stations at San Antonio. "Many people in these and intermediate cities are now flying to Mexico City when they might prefer to go by train if they could have through service," he stated. The Katy now handles passenger service between San Antonio and Laredo by arrangement with bus lines.

Tug Boat Radar Demonstrated by New Haven and P. R. R.

The application to harbor vessels of a new type of surface-search radar built by the Sperry Gyroscope Company was demonstrated by the New York, New Haven & Hartford and the Pennsylvania in New York harbor on November 6. On a regular service run between Bay Ridge, Brooklyn, and Greenville, Jersey City, the New Haven's tug boat "Transfer No. 21," with its wheelhouse blacked out to simulate fog conditions, moved two 330-ft. floats, each carrying 40 freight cars, across 3¼ miles of upper New York bay. Before this demonstration, the radar-equipped tug had conquered severe fog several times, the worst occasion being the night of October 16-17, when practically all New York harbor traffic was at a standstill. On that night the tug was able to carry out its regular schedule, moving 302 freight cars that would otherwise have been delayed until the fog lifted.

Railroad officials attending the demonstration said the radar equipment, valued at about $12,000, will prove of great importance in view of the present freight car shortage. Ordinarily, fog hampers the operation of railroad tugs and car floats in New York harbor five or six days each month at this time of year. The New Haven and Pennsylvania systems alone operate 51 tugs in the harbor and move approximately 3,500 railroad cars on floats daily in transfer between New England, Long Island, the city of New York and points in the south and west.



Capt. Charles Broadfield of the New Haven's "Transfer No. 21" looking into the radar "scope" which tells him, even under the most adverse fog conditions, what is in the surrounding waters

The radar installation consists of three parts: a transceiver, a scanner and an indicator: Located under the wheelhouse, the transceiver sends pulsations to the revolving parabolic scanner mounted on a special mast above the superstructure; the scanner projects these pulsations into space and receives back echoes from buoys, ships, land areas and other objects within range.

The returning echoes are converted by the transceiver into images which appear as luminous areas against the dark background of a 12-in. "scope," or cathode ray tube, in the indicator housing. Objects within range appear in proper relations to the standing ship both in distance and in bearings. Because radar is of special value during fog and other conditions of poor visibility in narrow channel pilotage, the one-mile range scale developed by Sperry will prove particularly useful on harbor tugs and river towboats it was said. For navigation in more open waters, range settings of two, six, fifteen and thirty miles are available on the instrument. When first installed, it was thought this radar unit would have an effective minimum radius of 80 yards, but actual experience on "Transfer No. 21" indicates that buoys and other objects as close as 45 yards are distinctly visible on the "scope."

New Orleans and Railroads Sign Contract for New Station

A contract between railroads serving New Orleans, La., and the municipality was signed on October 22, making financial arrangements for a number of civic and transportation improvements in the city, including a modern union passenger terminal to replace the five stations now in use; the removal of many miles of tracks; the elimination of several freight yards in the downtown section and the construction of seven overpasses and 17 underpasses to effect the elimination of street-railroad crossings at grade.

The improvements will be financed by two separate bond issues. One issue, totaling $23.5 million, is the exclusive obligation of the city, and provides $12 million for grade separations among other civic improvements. The other issue, $15 million, comprises revenue bonds which will finance the union passenger terminal and its facilities and will be redeemed solely by rental payments by the railroads. In addition, the carriers will provide $2.2 million in cash.

The contract remains to be approved by the Louisiana Public Service Commission and the Interstate Commerce Commission.

Equipment on Order

Railroads and private car lines had 126,213 new freight cars on order on November 1, as compared with 116,546 on October 1, according to the Association of American Railroads. Of the former total, Class I roads and railroad-owned private-controlled refrigerator companies had 109,467 new freight cars on order, the largest number on order at any time since April 1, 1923, when the total was 116,890. The number on order on October 1 was 104,451, as compared with 62,145 on November 1, 1946.

Cars on order by Class I roads and railroad-owned refrigerator companies on November 1 included 43,934 hopper cars, of which 3,443 were covered hoppers; 10,789 gondolas, 884 flat, 6,538 refrigerator, 750 stock, 333 miscellaneous freight cars and 46,239 box cars, including 43,397 plain and ventilated and 2,842 automobile box cars. Of the total number of new freight cars which Class I roads had on order on November 1, 26,373 will be built in railroad shops and 83,094 in outside shops.

The Class I roads also had 967 locomotives on order on November 1, compared with 573 on the same day in 1946. This year's total included 45 steam, four electric and 918 Diesel-electric locomotives, compared with 67 steam, six electric and 500 Diesel-electrics a year ago.

Class I roads and railroad-owned private-controlled refrigerator car companies put 46,308 new freight cars in service in the first ten months of 1947, compared with 34,127 in the same 1946 period. In October, the railroads installed 7,736 new freight cars—736 more than were installed in September—and the largest number for any month since April, 1942, when 10,478 were built.

New freight cars installed in the 1947 ten-months' period this year included 13,597 hopper cars, of which 1,361 were covered hoppers; 2,728 gondolas, 4,938 refrigerator, 977 flat, 500 stock, 351 miscellaneous freight cars and 23,217 box cars, including 20,269 plain and ventilated and 2,948 automobile box cars.

The Class I roads also put 676 new locomotives in service in the first ten months of 1947, of which 68 were steam, two electric and 606 Diesel-electric. New locomotives installed in the same period last year totaled 425, of which 79 were steam and 346 Diesel-electric.

The Class I roads and railroad-owned private-controlled refrigerator companies have retired 60,486 freight cars in 1947, of which number 12,129 were retired in October. In the comparable 1946 period, 51,056 were reired.

September Truck Traffic

Motor carriers reporting to the American Trucking Associations transported in September 2,675,324 tons of freight, an increase of 6.7 per cent over the 2,506,464 tons hauled in August and an increase of 23.7 per cent over the 2,162,139 tons transported in September, 1946. The A. T. A. index figure, based on the 1938-40 monthly tonnage of the reporting carriers, was 217 for September, as compared with 196 for the previous month, and the highest since March when the index was 206.

The September figures, according to the A. T. A., are based on comparable reports from 274 carriers in 43 states. Carriers in the Eastern district reported tonnage increases of 7.4 per cent and 24.7 per cent over the previous month and September, 1946, respectively; carriers in the Southern region reported increases of 10.9 per cent and 30.4 per cent, respectively; and carriers in the Western district reported increases of 4.3 per cent and 19.9 per cent, respectively.

Additional General News appears on page 76, while Revenue and Expense tables will be found on page 64, and Freight Operating Statistics appear on page 74. A list of current publications may be found on page 80.

With the Government Agencies

I.C.C. Tells Walter Why It Wrote Court

Representative from Pennsylvania had called letter "unprecedented"

Representative Walter, Democrat of Pennsylvania, has made public a letter which Chairman Aitchison of the Interstate Commerce Commission wrote him on October 29 in reply to the representative's request for an explanation of why the commission had written what he called an "unprecedented and impertinent letter" to Chief Justice Vinson of the Supreme Court. The communication about which the representative complained was written by Mr. Aitchison to the chief justice when the court had before it petitions for review of the Chicago, Rock Island & Pacific reorganization case; and it advised that if the case were remanded to the commission the latter was prepared to reconsider the reorganization plan previously approved by it.

After the letter was written, Senator Reed, Republican of Kansas, made it public, announcing at the same time that he was postponing public hearings in connection with his investigation of the commission's handling of railroad reorganizations. Additional background about the matter is given elsewhere in this issue—in the report of the Supreme Court's denial of a petition for rehearing on its October 20 refusal to upset lower court rulings which have the effect of ordering that the Rock Island plan, as previously approved by the commission, be carried out.

Representative Walter asked the commission four specific questions, which Chairman Aitchison's reply undertook to answer. Before getting to that, however, the chairman digressed to express the commission's regret that the congressman took "such exception" to its action. "We have," he added, "long valued your opinions concerning our work, often expressed with such force on the floor of the House." Mr. Walter is an opponent of pending legislation, of which Senator Reed is a sponsor, to set up procedures for voluntary readjustment of railroad financial structures, including provisions making such procedures applicable to certain roads already undergoing reorganization as well as to roads not yet in the hands of the courts. The four specific questions which Mr. Walter asked the commission, and Chairman Aitchison's answers, are as follows:

1. Why, after declaring in a letter to one John Wattawa, under date of October 1, 1947, that you would not reconsider the Rock Island case, and would not write the Supreme Court to ask a further review of the case by the commission, you just eight days later did that very thing?

Answer: When the letter from Mr. Wattawa was under consideration, a majority of the commission was of the view that it should not formally intervene and take a position with respect to the petitions for certiorari. Upon later consideration, however, a majority was of the view (Commissioner Mitchell voting in the negative) that, having general knowledge of the situation of the Rock Island, and being in position to proceed promptly with any further investigation of the matter the court might direct, the commision should send the letter, which was short of formal intervention and took no position on the merits of the petitions. The letter to the chief justice reflects the majority view as to appropriate action.

2. Why, knowing full well the desperate fight Senator Reed and Representative Reed [Republican of Illinois] are making to keep their legislation alive for passage in the next session of Congress, the commission apparently played into the hands of both by writing such a letter to the Supreme Court of the United States?

Answer: The letter to the chief justice made no reference to pending legislation and the commission does not consider that it had any bearing on the subject. The commission has not reversed its attitude towards reorganization legislation pending before the Congress.

3. Why, if the commission felt that "changed conditions" in the Rock Island case existed on October 9, in the face of an unexpected decision on an action in the Supreme Court, the commission didn't know of these alleged changed circumstances a year or two ago?

Answer: During the past several years the financial condition of railroads and the important trends with respect to their traffic have been in a state of flux. Although the commission is in touch with such matters, its individual members cannot be intimately and completely informed as to the details with respect to each railroad at all times. The trends have been constantly changing, and can at times be recognized or evaluated only with difficulty. The recent agitation with respect to the Rock Island focused attention upon that railroad. The commission has taken no position as to what, if any, effect should be given to the changes in the Rock Island situation.

4. What pressure was brought to bear on the commission by Senator Reed with his threatened investigation, and how far-reaching was this threat in bringing about the sudden reversal of the commission's stand?

Answer: The commission does not consider that the investigation of any of its activities by a member of the Congress constitutes the bringing of pressure upon it, in an objectionable sense. The action of the commission did not result from coercion.

In closing, Chairman Aitchison noted that Commissioner Mitchell, "having voted against sending the letter in question, took no part in the formulation of this letter." He also advised that Commissioner Rogers "has been absent and has not been consulted."

Emergency Board Report

The White House has made public a report which President Truman received on November 1 from the emergency board which he appointed to investigate a dispute between the Atlanta & West Point and the Western of Alabama and certain of their employees who are represented by the Brotherhood of Locomotive Engineers. The dispute, which brought a B. of L. E. strike threat, involved seniority rights of certain engineers promoted from the ranks of firemen and a demand for reinstatement of an engineer. The board found that the B. of L. E. claims were "without merit" and recommended that the strike notice be cancelled.

Freight Rate Increase Seen Vital to Carriers

Fiscal future of railroads rests with I. C. C. Ex Parte 166 decision, C. of C. says

The future of the railroad financial situation depends materially upon the decision which the Interstate Commerce Commission reaches in Ex Parte 166, according to conclusions advanced by the Transportation and Communication Department Committee of the Chamber of Commerce of the United States. The committee's views are embodied in a statement setting forth, for the information of the C. of C.'s membership, "essential background facts" of the railroad financial situation which "give rise" to the "important issue" of the proposed increase in freight rates.

The committee is headed by Evans A. Nash, president of the Yellow Transit Company, Oklahoma City, Okla., and the membership includes C. McD. Davis, president of the Atlantic Coast Line; F. G. Gurley, president of the Atchison, Topeka & Santa Fe; R. E. Woodruff, president of the Erie; and L. O. Head, president of the Railway Express Agency.

According to the committee, the combined effect of the Ex Parte 162 increases and those sought in Ex Parte 166 would approximately equal the added costs of railroad operation due to rises in wages, payroll taxes and prices since 1939 and would produce an average freight-rate level of about 50 per cent above that of 1939. In this connection, it noted that living costs have risen 61 per cent since 1939, and that the average revenues per ton-mile and per passenger-mile rose by approximately 80 per cent and 50 per cent, respectively, between 1917 and 1921 to meet cost increases due to World War I.

Many Considerations—The committee also said that the pending rate-adjustment problem is a "complicated" one involving consideration not only of the railroads' financial needs but also of the probable trends in traffic volume and operating costs and the effect of rates on traffic movement. The commission, it added, must "weigh the facts and evidence and decide the increases the railroads must receive to provide the quantity and quality of service the public needs."

Reviewing what the railroads have been doing to maintain and improve their service to the public, the committee stated that since 1940 the carriers have been making "strenuous efforts" to recover the ground lost during the "depression years." Between 1931 and 1940, it pointed out, capital expenditures averaged only $276,000,000 a year, as compared with $773,000,000 yearly between 1921 and 1930.

"Though the war caused a second delay in the application of many improvements and the acquisition of new rolling stock, the carriers have since been adding powerful new locomotives, improved type freight cars and streamlined passenger trains, installing new safety devices, improving roadbeds and generally increasing the efficiency of operation," the committee continued, adding that the railroads' ability to continue the needed pace in providing capital improvements in 1948 and 1949 depends largely upon their prospects for adequate and consistent earning power in the months and years ahead.

At the same time, the committee observed that gross capital expenditures of Class I roads for 1947, on the basis of commission estimates, will total $952,000 000, as compared with $562,000,000 in 1946. Of the former figure, it said $665,000,000 will be expended for new equipment and $286,000,000 for improvements of roadway and other fixed plant.

Earnings Must Be Steady—The C. of C. group, in its discussion of railroad earnings, contended that the carriers, as a regulated industry, have never had "large" earnings and that, in order that they may attract the necessary capital, their earnings must be "reasonably steady and reliable." It called the railroads' "low" rates of return a "far cry" from the impressions held by many people. In this respect, it referred to a poll conducted by the Opinion Research Corporation (see *Railway Age* of August 23, page 41) in which 24 per cent of those interviewed stated they believed the railroads earned 20 per cent or more on their investment in 1946, as compared to an actual 2.75 per cent. At the same time, it noted that the 1946 average dividend rate on all outstanding stock was less than 3 per cent and that dividends were paid on only about one-half of railroad common stock.

Although earnings of 4.97 per cent during the war years were only "moderate," the committee noted that the railroads "still devoted a substantial part of them" to improving their financial structures by reducing their long term debt by two billion dollars and that the 1946 fixed charges at $471,000,000 were "lower than at any time since before World War I."

"Since before World War I the railroads have been in an almost continuous three-way squeeze from rising costs, regulated rates and the competitive desire to render the most economical service to their patrons," the committee asserted. "Only by remarkable improvement in the efficiency of equipment and operation has it been possible to make ends meet as well as has been done." As an indication of the "money's worth" received by the public in rail transportation, the committee said that freight rates remained practically unchanged during World War II, while passenger fares were raised by only 10 per cent. It also observed that the average ton-mile freight revenue in 1946 was one-fourth below the 1921 levels and the average passenger fare over one-third below, adding that "these trends are in marked contrast with the trend of the national economic level in the same periods."

Turning to railroad costs, the committee said that "only the vast volume of traffic during the war, approximately doubling the previous peaks reached in the 1920's, enabled the railroads to make financial ends meet." It added, however, that since the war's end, costs have continued their "meteoric rise," the September wage level having gone up 67 per cent over that of 1939, and the prices of materials and supplies having climbed by 88 per cent.

In a brief closing reference to other forms of transportation the committee said that they, too, are "largely in the same boat." "If one has an unreasonably depressed rate level the others are affected," it continued. "This is especially true if the rates of the railroads . . . are not on a reasonably compensatory basis. Truck rates, while not geared directly to rail rates, in many cases have a necessary relation to them. The same is true of competitive water and air line rates. All these branches of transportation, like the rails, operate on narrow margins of earnings."

Government Seeks Reparations on Two More Commodities

The Department of Justice continued to assail the railroads' wartime freight rates last week when it filed with the Interstate Commerce Commission another complaint seeking recovery of alleged overcharges made on cartridge clips and ammunition links since December 20, 1941. As reported in *Railway Age* of November 8, page 59, hearings on four other reparation complaints will be held in Washington, D. C., starting January 20, 1948.

The latest complaint, filed at the request of the armed forces, seeks reparations on the basis of allegations that the rates on cartridge clip sand ammunition links, which have ratings of 45 per cent of first class are unreasonable to the extent that they exceed rates ranging from 28 per cent to 32½ per cent of first class. According to the complainants, ratings on iron and steel articles generally have been on the latter basis.

Commenting on the complaint, J. F. Sonnett, assistant attorney general in charge of the D. of J.'s anti-trust division, said that the governmen, soon after Pearl Harbor, tried to secure "proper classification ratings and rates" on its war traffic, including the clips and links, but that "such requests were repeatedly refused by the railroads."

Basing Point Practices of Steel Firms Again Hit by F.T.C.

An amended complaint charging the American Iron & Steel Institute and 101 producers of steel products with conspiracy and collusive action to fix and maintain delivered-price quotations and to restrain competition has been issued by the Federal Trade Commission. The original complaint reported in *Railway Age* of August 23, page 58, was directed against producers of both iron and steel products. Although aimed generally against all members of the institute, it specifically named only 26 corporations as representatives of the entire membership.

The amended complaint, however, specifically names as respondents the institute and 101 steel producers allegedly participating in the price-fixing combination. It is restricted to steel producers and does not involve iron manufacturers or iron. Both complaints assail the respondents' basing point practices as a means of establishing and maintaining the alleged collusive delivered-price quotations.

The amended complaint also charges that the respondent steel producers, through the institute, have collectively furthered their plans to restrain and lessen competition through discussions by their representatives in group meetings "where they have reached a meeting of their minds that it would be to their self-interest to so act as to forestall increases in steel production facilities," and thereafter acted in accordance with such understandings.

The F.T.C. said further that the respondents have acted in concert to prevent deviations from their announced prices by "taking collective action to curtail price quotations on an f.o.b. mill basis when unrelated to or calculated in accordance with their basing point practices." As a result, the F.T.C. added, buyers are deprived of equal opportunities to obtain steel in times of short supply when producers refuse to quote and sell f.o.b. mill.

The amended complaint alleges that prices quoted by the respondent producers to customers in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming are arrived at through application of basing point practices. It said the respondents quote prices as though shipments were being made from mills east of the Rocky mountains, although deliveries actually are made from mills west of the Rockies and in some instances near the location of the customer's business.

Such a practice, the F.T.C. contends, together with the use of the basing point practice in general, effects unfair and oppressive discrimination against purchasers in large areas who are thus deprived of the advantage which would otherwise accrue to them as a result of their proximity to the respondents' mills.

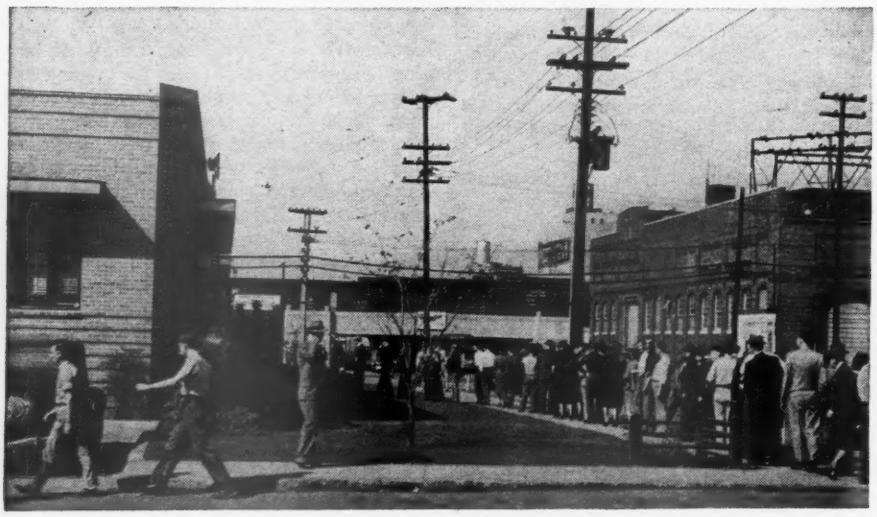
Supreme Court Refuses to Rehear Rock Island Case

The United States Supreme Court this week denied a petition filed by the Chicago, Rock Island & Pacific, as debtor, for rehearing on the court's October 20 refusal to review a ruling of the Circuit Court of Appeals for the Seventh Circuit which reversed an order whereby the federal district court at Chicago would have sent that road's reorganization plan back to the Interstate Commerce Commission for reconsideration. The effect of the Supreme Court's October 20 action, now affirmed, will be to require district-court approval of the plan which has been approved by the commission.

As reported in the *Railway Age* of October 25, page 55, the court's October 20 denial order was accompanied by a concurring opinion from Justice Butledge who chided the commission for having rendered the matter "highly embarrassing" without offering any aid to the court. The justice was referring to the letter written by Commission Chairman Aitchison to Chief Justice Vinson on October 9, and made public by Senator Reed, Republican of Kansas, at an October 14 press conference when the senator also announced that he had

Frisco President Greets Visitors at Freighthouse Opening

When the St. Louis-San Francisco opened its new $200,000 Birmingham (Ala.) freighthouse on October 28, Clark Hungerford, president of the road (top picture, third from left in background), was on hand to welcome personally the throng of visitors who came to inspect the building. The interest displayed in the new railroad facility by Birmingham citizens is evidenced in the bottom illustration, which shows a portion of the visitors who lined up to view the interior of the freighthouse.



* * *

deferred public hearings in connection with the investigation of the commission's administration of railroad reorganizations which is being conducted by a Senate interstate commerce subcommittee under his chairmanship.

The Aitchison letter to the chief justice said, among other things, that since the Rock Island plan was sent to the district court by the commission, "there have been material changes in the situation as it affects the condition of the debtor"; and that "should certiorari be granted and the plan eventually remanded to the commission, the commission is prepared to give full hearing on the facts and a report thereon as may be warranted." After otherwise criticizing the Aitchison letter, Justice Rutledge said that he was concurring in the court's denial order because the record did not support any other conclusion, in the absence of "any more positive or helpful suggestion" than the commission had offered.

The debtor's petition for rehearing revealed that since October 20 its counsel had tried without success to obtain from the commission a "more positive or helpful" suggestion. They wrote a letter to Chairman Aitchison on October 28, citing the Rutledge opinion and asking that the commission "express publicly" its views "as to the desirability of a reconsideration of the present plan." A reply, dated October 31, came from Commissioner Mahaffie, who said the matter had been referred to the commission's Division 4 of which he is chairman. Mr. Mahaffie interpreted the debtor's request as one suggesting that the commission "should make further representations to the Supreme Court" in connection with the petition to be filed for rehearing. "Division 4," he added, "has carefully considered your suggestion and has authorized me to advise you that it does not see its way clear to comply with it."

To this the debtor's counsel replied on November 3, telling Mr. Mahaffie that they had purposely refrained from asking the commission to make further representations to the court; but that the debtor desired to "know the opinion of the commission as to whether the 'material changes in the situation as it affects the condition of the debtor' are such as to warrant changes in the Rock Island plan." In closing this letter said: "We therefore respectfully request you to give us your views on this matter."

Commissioner Mahaffie's reply, dated November 6, made no reference to the request for "the opinion of the commission," interpreted the closing sentence's reference to "your views" as a request for his personal opinion and disposed of the matter on that basis. After referring to his previous letter reporting Division 4's decision not to make further representation to the court, he said: "Under the circumstances, it would be inappropriate for me to express any personal views concerning the matter. Expression of a commissioner's personal views regarding a proceeding is rather plainly treated in the court's opinion in *Minneapolis & St. Louis R. R. Co. v. Peoria & P.U. Ry. Co.*, 270 U.S. 580,585. Speaking of an order of the commission, the court stated that 'it cannot be affected by what a member of the commission may declare informally was intended.'"

After reproducing this correspondence, the petition for rehearing said that the November 14 deadline for its filing made it impossible to "pursue the matter" with the commission in advance of such filing. It added that Commissioner Mahaffie's November 6 letter "clearly misconstrues the debtor's request as being a request for a personal opinion rather than a request for the views of the commission."

October Operating Revenues 10.8 Per Cent Above 1946

From preliminary reports of 81 Class I railroads representing 81.4 per cent of total operating revenues, the Association of American Railroads has estimated that the October gross amounted to $640,779,216, an increase of 10.8 per cent above the $578,142,062 reported for the same 1946 month. Estimated October freight revenues were $535,068,838, compared with $459,954,039, an increase of 16.3 per cent, while estimated passenger revenues were $61388,203, compared with $73,812,161, a decrease of 16.8 per cent. The estimate for other revenues totaled $44,322,175, compared with $44,375,862, a decrease of 0.1 per cent.

Department of Commerce Unit Makes St. Lawrence Report

What is described as "an economic survey of the transportation phases" of the proposed St. Lawrence seaway project, "with special reference to potential traffic and the possible toll revenue which might be derived from it" has been issued by the Transportation Division of the Department of Commerce's Bureau of Foreign and Domestic Commerce. The report, a document of 73 mimeographed pages, was "planned and directed" by the division's acting chief, Paul M. Zeis, while "as-

sistance in preparing the text" was furnished by Henry Beitscher and Robert Smith.

Because of the "potential" annual traffic of 40½ to 53 million tons which it builds up, the report finds it necessary to raise questions as to whether the seaway as now planned will have adequate capacity. It "appears likely" that it will, and that "traffic now anticipated" could stand toll charges yielding from $21 to $27 million dollars annually.

In this connection the study pointed out that the pending congressional resolution to approve the United States-Canadian agreement for construction of the seaway contemplates that the project will be "a self-liquidating venture." The tolls which the report used to build up the foregoing annual totals were 50 cents per ton on iron ore, 25 to 35 cents per ton on grain and coal, and 15 cents per deadweight ton on vessels moving in ballast.

Figuring "Potentials"—The estimate of 40½ to 53 million tons of "potential" annual traffic considers only three commodities: Iron ore, 30 to 37½ million tons; grain, 6½ to 11½ million tons, and bituminous coal, about 4 million tons. The authors also looked into the prospect for petroleum traffic, and came up with this finding: "There is a distinct possibility that a huge traffic in petroleum might develop although any substantial traffic in that commodity should be regarded as a long-range rather than an immediate possibility."

The figure for iron-ore traffic is built up on the basis of an assumption that steel plants in the Great Lakes area will have to look to foreign sources of supply in the not too distant future when the reserves of better-grade ores in the Lake Superior region will have been depleted. It is further assumed that the principal foreign source would be Labrador from which the ore would move up the proposed seaway. In one place the report said that its analysis of the situation "indicates that it is almost a certainty that a huge traffic in iron ore will develop."

The forecast of future grain traffic is based on an assumption that exports of this commodity will total 20 million tons annually through 1955 and thereafter will range from 10 to 15 million tons "for many years to come." The seaway is expected to take a million tons now moving via Vancouver, B. C., and "nearly all of the export grain now moving via United States North Atlantic ports," although "a maximum of 500,000 tons might continue to move through these ports, mainly during the winter months." As to the seaway rate on grain, the report said that a range lower than 2.55 to 3.06 cents per bushel is "quite conceivable," if the upbound ore traffic leaves sufficient excess vessel capacity to warrant maintenance of out-of-pocket rates on the down movement of grain.

Coal Movement—The estimate of potential coal traffic assumed that "a water movement of United States coal is essential for the full preservation of United States wartime gains in the Quebec coal market." It is conceded that "of course" some all-rail movement of bituminous coal to Montreal "will continue, as heretofore, during the winter months when the St. Lawrence is closed to navigation, and aslo on a year-'round basis for shipments of special prepared sizes, and for shipments whose final destination is well inland from Montreal harbor."

The expectation that a "large tonnage" of petroleum traffic might sometime develop was based on the assumption that the United States and Canada may have to look to foreign sources for a large part of their petroleum requirements. "In such an event," the report said, "the St. Lawrence seaway would be a vital link in bringing foreign petroleum to the Great Lakes area." At the same time it was noted that if the iron ore traffic develops as anticipated, "only a very restricted capacity would remain for petroleum traffic and for vessels carrying general merchandise of all descriptions."

In giving its assurance that the seaway's capacity would be adequate for the "potential" iron ore, grain and coal traffic, the report disposed of the estimate of 25 million tons capacity which was made in 1934 by the Army's Board of Engineers. That estimate, it said, "was one of practical as distinguished from theoretical capacity, and apparently was based on the assumption that the traffic pattern on the seaway would resemble the pattern then prevailing on the Great Lakes." The "theoretical" capacity, as the report put it, "represents the total traffic which could be moved through the seaway during a normal 240-day navigation season if the locks were constantly operated at top speed and if every vessel passing through the locks in each direction were fully loaded."

This would put the capacity at 67.7 million tons if the vessels averaged 10,000 tons of freight, and at about 100 million tons if they averaged 15,000 tons. The report's finding of capacity for as much as 53 million tons represents a reduction of these totals by what were considered appropriate allowances for failure to attain the ideal conditions.

With respect to the annual-revenue figures from tolls, as set out above, the report emphasized that it was not the intention of the authors to advance such figures "as the revenue which should or will be derived from seaway traffic in ore, coal, and grain." It added that "the sole purpose of the estimate is to indicate the revenue which might be raised by assessing tolls at levels which do not interfere with the volume of seaway traffic, and which would encourage maximum use of the largest carriers."

Equipment and Supplies

U.P. to Spend $34 Million for Diesels and Freight Cars

The Union Pacific on November 18 placed orders for 181 Diesel locomotive units and 1,900 units of rolling stock at a total cost of $34,000,000, as a part of its $200,000,000 postwar improvement program, President George F. Ashby has announced. Of these orders, $26,000,000 has been allotted for the purchase of locomotives and $8,000,000 for gondola and hopper cars. Authorization by the board of directors for these expenditures was reported in the *Railway Age* of November 1, page 58.

Mr. Ashby listed the following purchases of Diesel-electric locomotive units: From the Electro-Motive Division of General Motors Corporation, 80 1,500-hp. freight, 20 1,000-hp. switching, and 12 1,500-hp. passenger units; from the American Locomotive Company, 40 1,500-hp. freight, 15 1,500-hp. road switching, and eight 2,000-hp. passenger units; and from the Baldwin Locomotive Works, five 1,000-hp. switching locomotives. Fairbanks, Morse & Co. received an order for one 2,000-hp. heavy-duty locomotive. The freight car orders include 400 70-ton gondolas from the American Car & Foundry Co. and 1,500 70-ton hopper cars from the Pressed Steel Car Company. Inquiry for a portion of the latter equipment was reported in the *Railway Age* of September 27.

Four Roads Buy 105 Troop Cars from W.A.A. Surplus

Of the 506 surplus troop sleeping cars sold last week by the War Assets Administration, 105 were purchased by railroads, and the others largely by the Reconstruction Finance Corporation and Warner International Company of Chicago. The Chicago, Rock Island & Pacific and the St. Louis Southwestern bought 50 each, the Bangor & Aroostook purchased four and the Minneapolis, Northfield & Southern bought one. The cars purchased by the Rock Island cost $3,780 each and all the others cost $2,880 each.

FREIGHT CARS

The Atchison, Topeka & Santa Fe has ordered 750 70-ton, 50½-ft., drop-end gondola cars, 250 70-ton ballast cars and 200 70-ton triple hopper cars from the American Car & Foundry Co., 250 16,000-gal. tank cars and 200 70-ton covered hopper cars from the General American Transportation Corporation, 100 50-ton gondola cars from the Pressed Steel Car Company, and 300 50-ton twin hopper cars from the Pullman-Standard Car Manufacturing Company. An inquiry by the Santa Fe for 1,150 freight cars was reported in the *Railway Age* of September 27.

LOCOMOTIVES

The Denver & Rio Grande Western has ordered 4 1,000-hp. and 3 1,500-hp. Diesel-electric switching locomotives from Fairbanks, Morse & Co. The smaller engines will cost approximately $360,000 and their delivery is expected from April to July, 1948. Delivery of the larger locomotives, which will cost about $375,000, is expected in December, 1947, and January, 1948.

The Indian State Railways have placed orders in Canada for 150 broad-gage steam locomotives of the 2-8-2 type. Ninety of the locomotives, plus 10 extra boilers, will be built by the Montreal Locomotive Works at an approximate cost of $7,500,000. The remaining 60 locomotives will be built by the Canadian Locomotive Company. Deliveries are scheduled to start in August, 1948.

The WESTERN MARYLAND has ordered two 1,500-hp. Diesel-electric locomotives from the Electro-Motive Division of the General Motors Corporation. Delivery of these locomotives is expected in August, 1948.

Organizations

The annual dinner meeting of the **Traffic Club of New York** will be held in the grand ballroom of the Biltmore hotel, N. Y., on November 24. Election of officers for the year 1948 will follow the meeting.

A meeting of the **Indianapolis Car Inspection Association** has been scheduled for 7 p.m., December 1, at the committee room in Union Station, Indianaplois. A regular business meeting and election of officers for the ensuing year have been scheduled.

Walter P. Hedden, director of Port Development, Port of New York Authority, will address the **Traffic Club of Newark** (N. J.), at the Hotel Robert Treat, Newark, on December 1. Mr. Hedden's subject will be "Modernizing Our Port Facilities."

At the annual meeting of the club the following were elected to office: Sol V. Rettino, director of traffic, Bristol-Myers Companies, chairman of the board of governors; Arthur N. Granzen, president, Bay Terminals, Inc., was re-elected secretary and George E. Martin, assistant sales manager, Lehigh Warehouse & Transportation Co., was reappointed editor of "Tariff," the club's official publication.

The Cincinnati Traffic Club will hold its pre-holiday dance in the Hall of Mirrors, Netherland Plaza hotel, Cincinnati, Ohio, on December 6.

A meeting of the **Canadian Railway Club** will be held at Mount Royal hotel, Montreal, on December 8 at 8 p.m. W. M. Neal, chairman and president of the Canadian Pacific, will present a paper entitled "Impressions Gained While in Europe."

At the next meeting of the **Central Railway Club** of Buffalo, scheduled for December 11, 8 p.m., at the Hotel Statler, Buffalo, N. Y., the guest speaker will be G. M. Harrison, grand president of the Brotherhood of Railway and Steamship Clerks. Mr. Harrison will present a paper entitled "Looking Ahead."

The **Car Department Association of St. Louis** will hold its annual election of officers at a meeting at the Hotel DeSoto, St. Louis, Mo., December 16 at 8 p.m.

The **Western Railway Club** will hold its annual Ladies' Night Party on December 20, 6 p.m., at the Hotel Sherman, Chicago.

The **Central Western Shippers Advisory Board** will hold its 56th regular meeting at the Newhouse hotel in Salt Lake City, Utah, on December 9, in cooperation with the Chamber of Commerce and the Transportation Club of that city.

Car Service

I. C. C. Service Order No. 778-B has further postponed, from November 20 until December 20, the effective date of Service Order No. 778, which is designed to prescribe railroad operating regulations for car movement. Originally issued with a November 1 effective date, the order would make each railroad and its operating officers responsible for car service, and fix a general 48-hour limit on stops of freight cars for loading, unloading or repairs (see *Railway Age* of October 18, page 80, and November 1, page 57).

I. C. C. Service Order No. 790, effective from November 14 until May 31, 1948, unless otherwise modified, sets up arrangements for priorities in car distribution for shipments of fuel coal to railroads in short supply. It provides that any road with less than 16 days' supply may, through its chief operating officer, certify that fact to the director of the commission's Bureau of Service. The latter, after verifying the facts set out in the submission, "shall . . . require the railroad or railroads serving the mines from which the coal is supplied to furnish cars for the transportation of coal in sufficient quantities to insure an adequate supply of fuel coal to enable the railroad for which the certification is furnished to perform car service and its duty as a common carrier regardless of any other car distribution rules in effect upon the railroad or railroads serving said mine." The order was issued on the basis of information that "numerous railroads in all sections of the country have an extremely short supply of coal for railroad fuel."

I. C. C. Service Order No. 791, effective from November 14 until January 31, 1948, unless otherwise modified, provides box-car priorities for loadings in the Pacific Northwest of the Commodity Credit Corporation's foreign-relief shipments of wheat. Railroads serving loading points in Oregon, Washington and Idaho and Paradise, Mont., and Troy, are to accord the priorities to the extent of the following weekly quotas: Union Pacific, 360 cars; Northern Pacific, 270 cars; Great Northern, 120 cars; Chicago, Milwaukee, St. Paul & Pacific, 42 cars; Spokane, Portland & Seattle, 18 cars. There are requirements that the shipments must be certified as intended for the relief program, and that they be forwarded to specified Oregon and Washington ports or to specified official inspection points in Washington, Oregon and Idaho "for inspection and diversion to the ports named."

I. C. C. Service Order No. 562, which makes Homer C. King the commission agent to divert and reroute freight traffic and empty cars to avoid congestion, has been modified by Amendment No. 3 which set back the expiration date from November 25 until November 25, 1948.

I. C. C. Service Order No. 784-A, effective November 17, vacated as of that date Service Order No. 784 which required the expedited return to that country of all box cars owned by Canadian roads. The order, in effect since October 23, was originally scheduled to expire November 30.

I. C. C. Service Order No. 787-A effective November 15, suspended from that date until April 30, 1948, Service Order No. 787, which imposed an embargo against M. H. Dunn & Co. of Detroit, Mich.

I. C. C. Service Order No. 782, which maintains an embargo against the McKinney Grain Company of McKinney, Tex., has been modified by Amendment No. 1, which changes the permit agent, assigning the work to the commission's service agent at Dallas, Tex., instead of the agent at Houston.

The Office of Defense Transportation has granted unrestricted relief from its minimum-loading order, General Order ODT 1, to authorize the transportation of refrigerator cars loaded exclusively with portable heaters used or to be used in the protection of rail shipments, if such cars would otherwise move empty. The relief is embodied in General Permit ODT 1, Revised-9A, which became effective November 14.

Supply Trade

V. Dale Wissmiller has been appointed western manager of the railway controls division of the **Minneapolis-Honeywell Regulator Company**, with headquarters at Chicago, and **Frank B. Conlon** has been appointed to the position of eastern manager of the division at New York. Mr. Wissmiller was born at Cooksville, Ill., and was graduated from the University of Illinois with an enginering degree in 1930. He was employed as a highway engineer for

V. Dale Wissmiller

the Illinois State Highway Department for six years prior to joining Honeywell in its service and installation department at Chicago. He later became service and installation manager at St. Louis, Mo., and was subsequently transferred to the firm's air conditioning controls division at Minneapolis as a sales engineer. He has been employed in the railway division at Chicago since 1944.

Mr. Conlon was graduated as an electrical engineer from Ohio State University in 1929, after which he became a draftsman in the office of the electrical engineer of the

Pennsylvania. In 1936, he joined the Sheffler-Gross Company, makers of pressure and temperature controls, as a sales engineer. His next position was with the Airtemp division of the Chrysler Corporation, where he assisted in the development of that firm's railroad air conditioning system. He became sales engineer in the transportation controls division of the Fulton-Silphon Company in 1939, specializing in railroad controls. Following duty in the navy as a lieutenant commander during World War II, Mr. Conlon rejoined Fulton-Silphon and remained with the company until he joined Honeywell in September of this year.

Frank B. Conlon

Clyde L. Hassel has been appointed vice-president in charge of sales and engineering of the **Pittsburgh Steel Foundry Corporation**, at Glassport, Pa. He succeeds **E. S. Weidle,** resigned, in the sales position. Mr. Hassel has been associated with the corporation since 1924.

Ernest R. Schmidt, formerly assistant to the plant manager of the Hunting Park plant, Philadelphia, Pa., of the **Budd Company,** has been appointed plant manager, to succeed the late **Sylvester A. Mahan, Sr.**

J. C. Elmburg, manager of the Boston (Mass.) branch of **Fairbanks, Morse & Co.,** has been transferred to Atlanta, Ga., succeeding **G. N. Van Epps,** who has resigned. Mr. Elmburg is succeeded at Boston by **V. O. Harkness,** manager of the firm's Diesel division at Chicago. **T. M. Robie** has been appointed manager of the general Diesel sales division, with headquarters at Chicago.

Charles E. McGlaughlin has joined the headquarters staff of **Bituminous Coal Research, Inc.,** as special representative to maintain contact with B. C. R. members, coal producers, railroads, and manufacturers of coal-burning equipment. He succeeds **T. A. Day,** who has joined the public relations staff of the Bituminous Coal Institute, an affiliated organization.

Earl R. Nelson has been appointed manager of the Cincinnati, Ohio, plant of **Joseph T. Ryerson & Son,** to succeed **Wayne D. Dukette,** who will head the company's new steel-service plant now under construction in the San Francisco, Cal., area. The company also has announced the completion of new offices and a large addition to the existing warehouse facilities at E. 53 street and Lakeside avenue, Cleveland, Ohio.

The **General Electric Company** has announced five staff appointments in its locomotive and car equipment divisions of the apparatus department at Erie, Pa., as follows: **F. H. Craton,** former assistant manager of the transportation division, to manager of sales; **H. W. Gouldthorpe,** former Erie works engineer, to manager of engineering; **David Blair,** former production manager of the Erie works, to production manager of the locomotive and car equipment divisions; **H. O. Trumpfheller,** former assistant to the manager of apparatus manufacturing at Erie, to assistant to manager—manufacturing; and **D. A. Smith,** former assistant works accountant, to accountant.

H. W. Gouldthorpe

Mr. Craton joined General Electric in 1924 as a member of the factory management course in Schenectady, N. Y. From 1926 to 1930 he was a member of the railway equipment engineering division and in the latter year was transferred to the transportation engineering division. In 1941 he was appointed manager of the industrial haulage division. During the recent war he served on the industry advisory committee of builders of small locomotives of the War Production Board and also was assistant chief of the motive power section of the W.P.B.

F. H. Craton

Mr. Gouldthorpe joined the company in 1927. He worked in the motor division of the transportation engineering division and, in 1936, was appointed mechanical design section head of the division. He was assigned to the general engineering division in 1941 and in the following year was appointed executive assistant to the engineer of the locomotive engineering division. He joined the transportation division in 1944.

David Blair

Mr. Blair joined General Electric in 1916 and worked on production in the locomotive division. He later assisted in organizing a supply section in the production division and served as supervisor until 1930. In that year he joined the motor division and served successively as section supervisor, supervisor of production of the railway and industrial motor division, and assistant superintendent of the motor division, holding the latter position from 1934 to 1942, when he was appointed works production manager.

H. O. Trumpfheller

Mr. Trumpfheller entered the employ of the Erie works in 1914 as a toolmaker. In 1917 he was transferred to the motor division as an assistant general foreman of a munitions job in World War I, and later was appointed foreman of the commutator operation. When the transportation division was moved to the Erie Works in 1926, he was appointed assistant superintendent of the motor division. A short time later, he was appointed superintendent of the

generator division and, in 1928, when the motor division was reorganized, he was appointed its superintendent, and later assistant to the works manager.

The **Link-Belt Company** has announced the opening of a sales office at Grand Rapids, Mich. **Peter Groustra**, district sales engineer at Detroit, Mich., has been appointed district sales manager in charge of the new office.

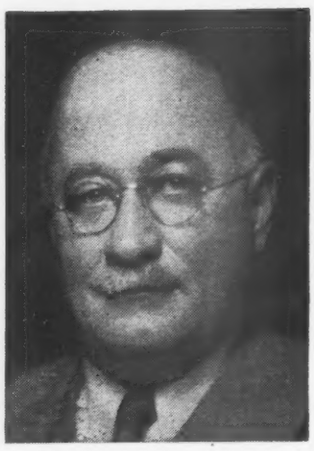
Emmet W. Narramore, formerly associated with the Southern Pacific, has been appointed assistant to manager of the loading division of **Evans Products Company**, at Plymouth, Mich.

Allan Weber has been appointed special railroad representative in the eastern United States for the **Goodyear Tire & Rubber Co.**, with headquarters in New York, to succeed **R. B. Warren**, who has been appointed Pittsburgh, Pa., district manager for the mechanical goods division.

OBITUARY

Frederick H. Thompson, a vice-president and member of the board of directors of the Simmons-Boardman Publishing Corporation since 1924 and an employee of this company and its predecessors since 1912, died at his home in Cleveland, Ohio, on November 14. He was 62 years old.

Mr. Thompson was born in Cleveland and educated at the Brooks School in that city and at the University School and Military Institute in East Orange, N. J. His business career began in 1904 when he joined the Music Trade Review as its eastern representative. Three years later he was appointed advertising manager for the American Engineer and Railroad Journal. From 1912 to 1920 he served as business manager of the Railway Mechanical Engineer. During the following four years he was general manager of the central district for Simmons-Boardman, serving in that capacity until his election as vice-president and a director.



Frederick H. Thompson

Ill health had forced Mr. Thompson's retirement from active participation in business some time ago, but he acted in an advisory capacity until his death. During the recent war he served as chairman of a selective service board in Cleveland. He was a member of the Cleveland Athletic Club and Industrial Marketers (Cleveland); the Duquesne Club and the Oakmont Country Club of Pittsburgh, Pa.; and of the Sons of the American Revolution.

Financial

NEW YORK, NEW HAVEN & HARTFORD.—*Reorganization of Boston & Providence.*—The Interstate Commerce Commission has dismissed without prejudice an application filed by C. W. Mulcahy, trustee of the Boston & Providence, in which he requested that (1) if the duty of continuing the operation of the B. & P. devolves, as a matter of law, upon the reorganized New Haven, an order be entered fixing the terms and conditions under which the property of the B. & P. shall be operated by the New Haven, subsequent to the date of consummation of the reorganization of the latter road, including such rental to be paid by the New Haven as the commission shall find to be just and reasonable; or (2) if the duty of continuing the operation of the B. & P. does not devolve, as a matter of law, upon the New Haven, an order be entered ordering the New Haven, or such other carrier as may be designated by the commission, to continue the operation of the B. & P. from and after the date of consummation of the reorganized New Haven, such order also to include rental or compensation terms to be paid by the operating road.

The commission said that the trustee's application was presented "prematurely" in the light of action taken by the federal district court, which, pursuant to the consummation order and final decree of September 11 in the New Haven reorganization, reserved jurisdiction to consider and act on claims between the reorganized company and the B. & P. or its trustee arising out of the provisions of the plan relating to the B. & P. or out of the operation of the B. & P. by the trustees or the reorganized company. The commission also noted receipt of an October 18 letter from the vice-president and general counsel of the New Haven in which it was stated that operation of the B. & P. would be continued.

PACIFIC ELECTRIC. — *Acquisition.* — This road has applied to the Interstate Commerce Commission for authority to acquire from the Southern Pacific approximately 1.1 mile of track which that road has abandoned. The segment, extending from a point near Wintersburg, Cal., to a point near Wiebling, would be purchased at its net salvage value of $3,155 and $17,095 would be spent to rehabilitate it. It would give the applicant a continuous line between Stanton and Huntington Beach.

SOUTHERN PACIFIC. — *Equipment Trust Certificates.*—This road has requested bids by November 24 for the purchase of $14,500,000 of series W equipment trust certificates to be dated December 1, 1947, and due in equal installments on each December 1 from 1948 to 1957, inclusive. The certificates, for which no bid less than 99 will be considered, are intended to finance in part the purchase of 15 4-unit 6,000-hp. Diesel-electric freight locomotives, 1,500 50-ton steel-sheathed, wood-lined box cars and 1,500 50-ton composite, drop-bottom, general service gondola cars, the total cost of which is estimated at $21,785,790.

Dividends Declared

Delaware & Bound Brook.—50¢, quarterly, payable November 20 to hilders of record November 12.

Illinois Central.—(Leased Lines), 4% guaranteed, $2.00, semi-annually, payable January 2 to holders of record December 11.

Pittsburgh & Lake Erie.—irregular, $4.00, payable December 15 to holders of record November 24.

Pittsburgh, Bessemer & Lake Erie.—$1.50, semi-annually, payable December 1 to holders of record November 15.

Troy & Greenbush.—$1.75, semi-annually, payable December 15 to holders of record December 1; $1.75, semi-annually, payable June 15 to holders of record June 1.

Average Prices Stocks and Bonds

	Nov. 18	Last week	Last year
Average price of 20 representative railway stocks..	46.58	46.71	48.26
Average price of 20 representative railway bonds..	85.48	86.98	89.91

Construction

ALTON & SOUTHERN. — This road has awarded a contract to H. B. Deal & Co., Inc. of St. Louis, Mo., for the construction of a yardmasters' tower at its Davis yards in East St. Louis, Mo. Erection of the 51-ft tower will cost between $30,000 and $35,000. Materials for the work are being procured by the A. & S.

INDIANAPOLIS UNION. — This road has awarded a contract to Smith & Johnson, general contractors of Indianapolis, for the construction of a grade separation structure over Shelby street in that city. Cost of the project is estimated at $178,569.

MISSOURI PACIFIC.—This road has awarded a contract to Arthur Thompson of Jacksonville, Tex., for the remodeling of its station in that city. The work involves the construction of a 24-ft. by 68-ft. brick-and-concrete depot and a 20-ft. by 48-ft. concrete-and-steel-covered platform. Cost of the preject is estimated at $30,000.

NEW YORK, CHICAGO & ST. LOUIS.—This road has awarded a contract to the Otis Elevator Company for the installation of a 5,000-lb. capacity freight elevator in a new 2-story store house being constructed at Lima, Ohio. Completion of the store house is scheduled for June 1, 1948. Otis will start installing the elevator on next February 15 and expects to have it completed in 30 days.

VIRGINIAN.—Division 4 of the Interstate Commerce Commission has authorized this road to construct two extensions to its lines in West Virginia. One line will extend approximately 4 miles from a point near Whitby up Bowyer Creek to a proposed coal-mining operation. Cost of the construction is estimated at $247,000. The other extension, estimated to cost $166,000, will extend approximately 2 miles northerly from a connection with the Allen Creek branch near Wyco. The latter extension is to open up an additional coal area estimated to contain more than 4,345,000 tons of recoverable coal.

Railway Officers

EXECUTIVE

N. N. Baily, general manager of the Reading, with headquarters at Reading, Pa., has been elected vice-president in charge of operation and maintenance, with headquarters at Philadelphia, Pa., succeeding **William G. Curren,** who has resigned due to ill health. Mr. Baily was born at Philadelphia on August 8, 1903, and was graduated from the Germantown Friends' School in 1921 and from the University of Pennsylvania in 1925 as a civil engineer. On October 1, 1925, he was employed by the Reading as a levelman in the engineering department. The following month he became assistant supervisor of the Harrisburg division and a year later

N. N. Baily

he was transferred to Reading. Mr. Bailey became yardmaster at Catawissa, Pa., on July 1, 1926; assistant to trainmaster at Harrisburg, Pa., in 1927; and assistant trainmaster at Cresson, Pa., in 1929. On June 15, 1932, he transferred to St. Clair, Pa., and on July 1 of the following year he became assistant superintendent of the Philadelphia division, holding that position until September 1, 1936, when he was transferred to the Reading division. Mr. Baily was advanced to superintendent of the latter division on December 1, 1939, becoming assistant general manager on November 16, 1944, and general manager on September 1, 1945.

Mr. Curren was born at Webbs Mills, N. Y., on April 12, 1881, and was educated at teacher's training school and business college. He entered railroad service in 1901 as agent on the Northern Central (now Pennsylvania). From 1902 to 1908 he served as clerk, secretary, general car distributor and inspector of transportation of the Erie. In the four years following he worked as chief clerk and next as superintendent car service on the Kansas City Southern. Mr. Curren went with the Baltimore & Ohio in 1912 and for the next 14 years served as assistant superintendent, supervisor of transportation, assistant to general superintendent of transportation, superintendent of transportation and general superintendent of transportation. In 1926 he was named general manager, B. & O. New York Terminal lines, from which position he received a furlough on March 1, 1942, to go with the Office of Defense Transportation as director of the Eastern

William G. Curren

region at New York. Mr. Curren left the latter position on August 1, 1944, when he was elected vice-president in charge of operation and maintenance of the Reading, which position he held until his resignation on November 17. During World War I Mr. Curren served as special agent in charge of transportation, at New York, and as transportation assistant of the eastern region of the U. S. Railroad Administration. In 1919 he became general superintendent of transportation of the Allegheny region of the U.S.R.A. at Baltimore, Md.

C. B. Bennett, assistant to senior vice-president of the Chesapeake & Ohio at Cleveland, Ohio, has been appointed assistant to the president of the New York, Chicago & St. Louis at Cleveland.

Charles W. Brown, chairman of the board and president of the Western Maryland, with headquarters at Baltimore, Md., has requested to be relieved of active duty, effective December 31, after nearly half a century of railroad service, including 17 years with the Western Maryland. Mr. Brown, who will retain his place on the board of directors, will be succeeded as president and chairman of the board by **Eugene S. Williams,** who has been vice-president and general counsel of the road for the past 12 years.

Marion J. Wise, vice-president, development, of the Central of Georgia, with headquarters at Savannah, Ga., has been elected executive vice-president, with jurisdiction over all departments, and has been appointed by the trustee as chief executive officer.

Joseph W. Klein, traffic manager of the Midland Valley, the Kansas, Oklahoma & Gulf and the Oklahoma City-Ada-Atoka, at Tulsa, Okla., has been elected also vice-president.

FINANCIAL, LEGAL AND ACCOUNTING

M. Mason Barber, assistant general freight claim agent af the Southern at Chattanooga, Tenn., has been promoted to the position of general freight claim agent there, and not to that of general freight agent, as was erroneously reported in *Railway Age* of November 8. He succeeds **Charles L. Dautrich,** who has been assigned to other duties. Mr. Barber was born on December 25, 1894, at Kings Mountain, N. C., attending the public schools there, Rutherford College and the Westminster School. He entered the service of the Southern in 1915 as a clerk at Chester, S. C., and subsequently held positions there as traveling auditor and freight accountant. In July, 1918, he was appointed traveling auditor of the Southern's subsidiary lines at Atlanta, Ga., returning to Chester in September of that year in a similar capacity. He was advanced to freight claim agent of the subsidiary lines at Atlanta in 1933, and was promoted to

M. Mason Barber

general freight claim agent of those lines in 1937. He had held the position of assistant general freight claim agent of the Southern system since January 1, 1944.

William J. Kane, secretary and counsel of the Railroad Credit Corporation at Washington, D.C., has been appointed assistant general counsel of the American Short Line Railroad Association at Washington. Mr. Kane was born at Boston, Mass., on October 26, 1897, and was graduated from Georgetown University, Washington, in 1921, receiving his LL.B. degree from Columbus University Law School, Washington, in 1929. From 1930 to 1935 Mr. Kane was practicing attorney in the District of Columbia and in 1932 he became also counsel of the Railroad Credit Corporation, later becoming also secretary.

C. E. Huntley has been elected secretary-treasurer of the American Short Line Railroad Association at Washington, D. C., succeeding **J. P. Nye,** who has resigned to enter the service of a non-carrier. Mr. Huntley was born at South Norwalk, Conn., on April 2, 1897, and was graduated from the Elmira (N. Y.) Free Academy in 1915, receiving his LL.B. degree from Syracuse University College of Law in 1920. He also attended special courses in

transportation, banking, accounting and corporate finance at New York University. Mr. Huntley served in the U.S. Navy during World War I, later being employed by the Pennsylvania Railroad. Afterwards he entered the field of corporate finance and investment banking and became an investment analyst and consultant to commercial banks, insurance companies, etc. Mr. Huntley is a lecturer and author of numerous books on railroad statistics and finance. He is a former president and general manager of the Tennessee Central.

Mr. Nye was born at Shenandoah, Iowa, on November 18, 1912, and received his B.S. in business administration from the University of Nebraska in 1934. From 1934 to March, 1936, Mr. Nye was a clerk with the Bankers Life Insurance Company of Nebraska at Lincoln, Neb. He entered railroad service in March, 1936, as general auditor of the Rapid City, Black Hills & Western at Rapid City, S. D., serving in that capacity until January, 1942, when he became also general manager of that road. In August, 1944, Mr. Nye was appointed secretary-treasurer of the American Short Line Railroad Association at Washington, which position he held until November 10.

J. N. Dillen, secretary and assistant treasurer of the Wheeling & Lake Erie at Cleveland, Ohio, has been appointed secretary of the New York, Chicago & St. Louis, with headquarters at Cleveland, succeeding **H. F. Lohmeyer,** resigned.

OPERATING

Samuel D. Stainton, superintendent of organization of the Southern departments of the Railway Express Agency, with headquarters at Atlanta, Ga., has been appointed general superintendent of organization at New York and also chairman of the Standard Practices Committee. **Frank T. Halligan,** superintendent of the Northern New England division at Boston, Mass., has been appointed superintendent of organization at New York, succeeding **Charles Benton,** deceased.

L. W. Palmquist, assistant superintendent of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Beloit, Wis., has been promoted to superintendent at La Crosse, Wis., succeeding **M. P. Ayars.** Mr. Ayars has been appointed superintendent of sleeping and dining cars, with headquarters at Chicago, succeeding **Bernard J. Schilling,** who has returned to the road's passenger department to engage in special work.

Arthur N. Jewell, general superintendent of the Reading, with headquarters at Reading, Pa., has been advanced to general manager there, succeeding **N. N. Baily,** who has been elected vice-president in charge of operation and maintenance. The position of general superintendent at Reading has been abolished. Mr. Jewell was born at Newark, N. J., on February 24, 1898, and attended the West Philadelphia high school. He became associated with the Reading in 1913 as a clerk to the auditor of passenger traffic. He entered the operating department in 1915 as a messenger in the superintendent's office, where he advanced through various positions until 1920 when he became yardmaster of the Philadelphia division. He then advanced to assistant trainmaster and supervisor of terminals at Reading. In 1941 he was promoted to trainmaster at

Arthur N. Jewell

Reading and the following year to assistant superintendent of the Philadelphia division. In 1945 he was appointed superintendent of the Shamokin division at Tamaqua, Pa., and later in the year transferred to Philadelphia. In March, 1947, he became assistant general manager and he was appointed general superintendent in August.

Raymond W. Davis, whose promotion to division superintendent of the Northern Pacific, at Glendive, Mont., was reported in *Railway Age* of November 1, was born on October 20, 1896, at St. Paul, Minn. He entered the service of the N.P. in 1916 as a chainman in the road's engineering department at Duluth, and later held the positions of rodman and instrumentman at various points on the railroad. He advanced successively to roadmaster, division roadmaster, trainmaster and assistant superintendent, being located at Fargo, N. D. in the latter position. Mr. Davis was serving as assistant superintendent at Billings, Mont., at the time of his recent advancement.

TRAFFIC

T. H. Ramsey, division freight agent of the Reading at Harrisburg, Pa., has been appointed Western freight traffic manager, with headquarters at Chicago, succeeding **Evan W. Girton,** resigned. **J. A. Klinger** has been appointed general agent at Cincinnati, Ohio, succeeding **James Lawson,** who has been appointed division freight agent at Allentown, Pa. Mr. Lawson succeeds **J. G. Vandegrift,** who has been transferred to Harrisburg, to replace Mr. Ramsey.

M. V. Olmsted has been appointed general agent of the Terminal Railroad Association of St. Louis, with headquarters at Chicago.

Herbert E. Wilson, Jr., has been appointed district freight and passenger agent of the Southern at New York, succeeding **Charles C. Elder,** who has been appointed district freight agent at Lynchburg, Va.

Andrew E. Hanson, commercial agent, has been appointed district freight agent, with headquarters as before at St. Louis, Mo., succeeding **G. C. Schmoll,** retired.

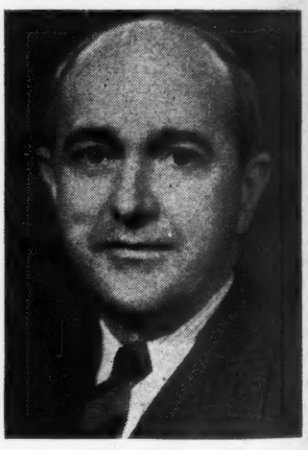
J. R. Bull has been appointed division freight agent of the Norfolk Southern at Norfolk, Va. **L. S. Johnson** has been appointed general agent at Pittsburgh, Pa.

W. L. Robinson has been appointed eastern traffic manager of the Chicago & Eastern Illinois at New York. **E. H. Schaet** has been appointed general agent and **J. G. Severs** has been appointed district freight and passenger agent, both with headquarters at New York.

E. R. Burriss has been appointed assistant general freight agent of the Atlantic Coast Line at Jacksonville, Fla. **G. J. Hemby** has been appointed general agent at Tampa, Fla.

H. I. Scofield has been appointed general agent of the Denver & Rio Grande Western, with headquarters at Sacramento, Cal.

B. W. Tremayne, whose promotion to assistant to chief traffic officer of the Missouri Pacific, at St. Louis, Mo., was reported in *Railway Age* of November 1, was born on September 13, 1885, at Penzance, Cornwall, England, and began his railroad career in 1903 with the St. Louis & San Francisco (now St. Louis-San Francisco) as an office boy. He served for a short time as stenographer with the Missouri-Kansas-Texas, joining the M. P.'s me-



B. W. Tremayne

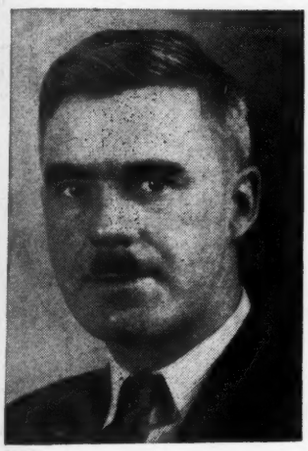
chanical department in that capacity in 1910. He subsequently served as secretary to freight traffic manager and as chief clerk to freight manager, both at St. Louis, and as chief clerk to general freight agent at Kansas City, Mo. In 1928 he was appointed chief clerk and acting assistant to vice-president of traffic, at St. Louis, which position he held until 1932, when he was advanced to office manager, traffic department. Mr. Tremayne was serving in the latter capacity at the time of his recent appointment.

Hays M. Heimbaugh, assistant general freight agent of the Chicago, Rock Island & Pacific, with headquarters at Chicago, has been appointed one of four permanent members of the auxiliary com-

mittee of the Central Freight Association, effective November 17. Mr. Heimbaugh was born on September 30, 1904, at Pittsburgh, Pa., and received his higher education at the University of Illinois, which awarded him a B.S. degree in railway administration in 1928. Mr. Heimbaugh's early railroad experience was gained in the operating department of the St. Louis-San Francisco during summer vacation periods while attending high school at Monett, Mo. He was employed in the maintenance department of the Delaware & Hudson during the summer periods while attending college, and during 1926 and 1927, was employed in the traffic department of the Illinois Central. Upon his graduation in 1928, he joined the Rock Island, and served until 1942 in various capacities in its freight traffic department at Chicago. Following a period of military service during World War II, he returned to the road on March 1, 1946, as assistant general freight agent, which position he held at the time of his new appointment.

ENGINEERING & SIGNALING

William E. Griffiths, whose appointment as engineer of track of the Canadian National at Montreal, Que., was reported in the *Railway Age* of November 15, was born in England in 1901 and went to Canada



William E. Griffiths

in 1911. He was graduated from McGill University in 1931 with the degree of bachelor of science in civil engineering. Mr. Griffiths joined the district engineer's office, Canadian National, in 1937, at Montreal as concrete inspector. He became instrumentman, assistant engineer and assistant division engineer, and was appointed division engineer at Ottawa, Ont., in 1944. Returning to Montreal in 1946, he became division engineer, Montreal terminals. In August, 1946, he was promoted to general maintenance inspector, Montreal terminals, which position he held until his recent appointment as engineer of track at Montreal.

PURCHASES AND STORES

J. R. Clary, assistant purchasing agent of the New York, Chicago & St. Louis, has been appointed general purchasing agent, having jurisdiction over purchases and stores, with headquarters as before at Cleveland, Ohio, succeeding **G. O. Beale,** resigned. **W. R. Bowers,** assistant purchasing agent of the Chesapeake & Ohio and the New York, Chicago & St. Louis, has been appointed assistant general purchasing agent of the latter road, with headquarters as before at Cleveland. **W. C. Glosh** and **G. N. Hoefler** have been appointed purchasing agent and assistant purchasing agent, respectively, of the New York, Chicago & St. Louis, at Cleveland. **F. S. Shinn** has been appointed tie and timber agent, N. Y., C. & St. L. at Cleveland.

SPECIAL

H. Cranston Lawton has resigned as a staff reporter on the Boston Herald to become editor of the Maine Central magazine at Portland, Me. Mr. Lawton succeeds to the duties of **Nils A. Lennartson,** who has resigned as assistant publicity manager of the Maine Central, to take a post with the United States Steel Company's public relations department, with headquarters at Portland, effective November 24. Mr. Lawton was born at New Bedford, Mass., was graduated from Kimball Union Academy and attended the Boston University School of Journalism. Prior to joining the staff of the Boston Herald in 1940, Mr. Lawton edited a summer weekly newspaper in New Hampshire. In World War II he served as a communications officer in the Army Air Forces and served overseas with the 13th Air Force in the Philippines.

J. W. Oram, assistant chief of personnel of the Pennsylvania, has been promoted to chief of personnel, with headquarters as before at Philadelphia, Pa., succeeding **C. E. Musser,** who has retired from active service after 44 years of service with the road. **M. L. Long,** superintendent of the labor and wage bureau of the Eastern region at Philadelphia, succeeds Mr. Oram as assistant chief of personnel. **C. E. Alexander,** superintendent of the labor and wage bureau of the western region at Chicago, has been transferred to Philadelphia to succeed Mr. Long. **J. E. McFarland,** chief clerk of the Eastern region labor and wage bureau, succeeds Mr. Alexander at Chicago. Mr. Oram, a native of Shamokin, Pa., and a graduate of Princeton University and of the University of Pennsylvania Law School, entered the legal department of the P. R. R. as a law clerk in 1935. He was subsequently assistant solicitor and assistant general counsel, specializing in the laws relating to labor and employment relations. He was appointed assistant chief of personnel on December 1, 1942, which position he held until his recent promotion to chief of personnel.

Mr. Musser, born in Lancaster, Pa., entered the Pennsylvania's train service in 1903. He subsequently became interested in labor affairs and held a number of important railroad brotherhood posts. He was appointed assistant superintendent of the railroad's labor and wage bureau, Eastern region, in 1928 and after subsequent promotions became chief of personnel on July 1, 1943, which position he held until his retirement.

Born in Dauphin, Pa., Mr. Long was first employed by the P. R. R. in 1902 as a laborer at the Renovo, Pa., shops. He became a clerk, then a timekeeper, and moved up through the ranks to become superintendent of the labor and wage bureau, Western region, in 1939. In 1943 he was transferred to the Eastern region.

OBITUARY

John J. Mulrooney, district passenger agent of the Chesapeake & Ohio at Cleveland, Ohio, died on November 9 at the age of 45.

John S. Gensheimer, superintendent of telegraph and signals of the Pennsylvania at New York, died on November 11 at his home in Ocean Grove, N. J., after a long illness. He was 65 years of age. Mr. Gensheimer, who had been on leave of absence from his duties with the railroad since July 1, would have completed 50 years of service with the Pennsylvania on December 1. His friends and associates had planned to honor him on that date with a testimonial dinner at the Hotel Pennsylvania, at which time he was to have been presented with the company's 50-year service button. Born at Camden, N. J., on March 10, 1882, Mr. Gensheimer entered the service of the Pennsylvania on December 1, 1897, as a messenger on the West Jersey & Seashore. He subsequently served as clerk, batteryman, signal repairman, and assistant signal foreman on that line, now a part of the P. R. R. system. On November 27, 1910, he became signal foreman assigned to the recently completed terminal at New York. On April 10, 1911, he became assistant inspector of signals of the Eastern Pennsylvania division, and served thereafter in various capacities on the Maryland division and in the Central region of the road before returning to New York on November 7, 1928, as engineer in the telegraph and signals department. On May 1, 1937, he was advanced to superintendent of telegraph and signals of the New York zone at Pennsylvania station. Mr. Gensheimer had served for a time as chairman of the Signal Section of the Association of American Railroads. He was a director of the Pennsylvania Railroad Y. M. C. A. in New York.

Charles Abner Lutz, who retired in September, 1941, as vice-president—accounting of the Railway Express Agency at New York, died at his home in Montclair, N. J., on November 13, after an illness of several months, at the age of 76.

Robert Nelson Dickinson, assistant advertising manager of the Norfolk & Western, died at Roanoke, Va., on November 14 after an illness of three months, at the age of 43.

A. E. Peterson, who retired in 1945 as foreign freight agent of the Erie, with headquarters at Chicago, died on November 14 at the Augustana hospital in that city.

Frank J. Wall, vice-president of the New York, New Haven & Hartford, died on November 18, in the Brooks Hospital at Brookline, Mass., at the age of 60.

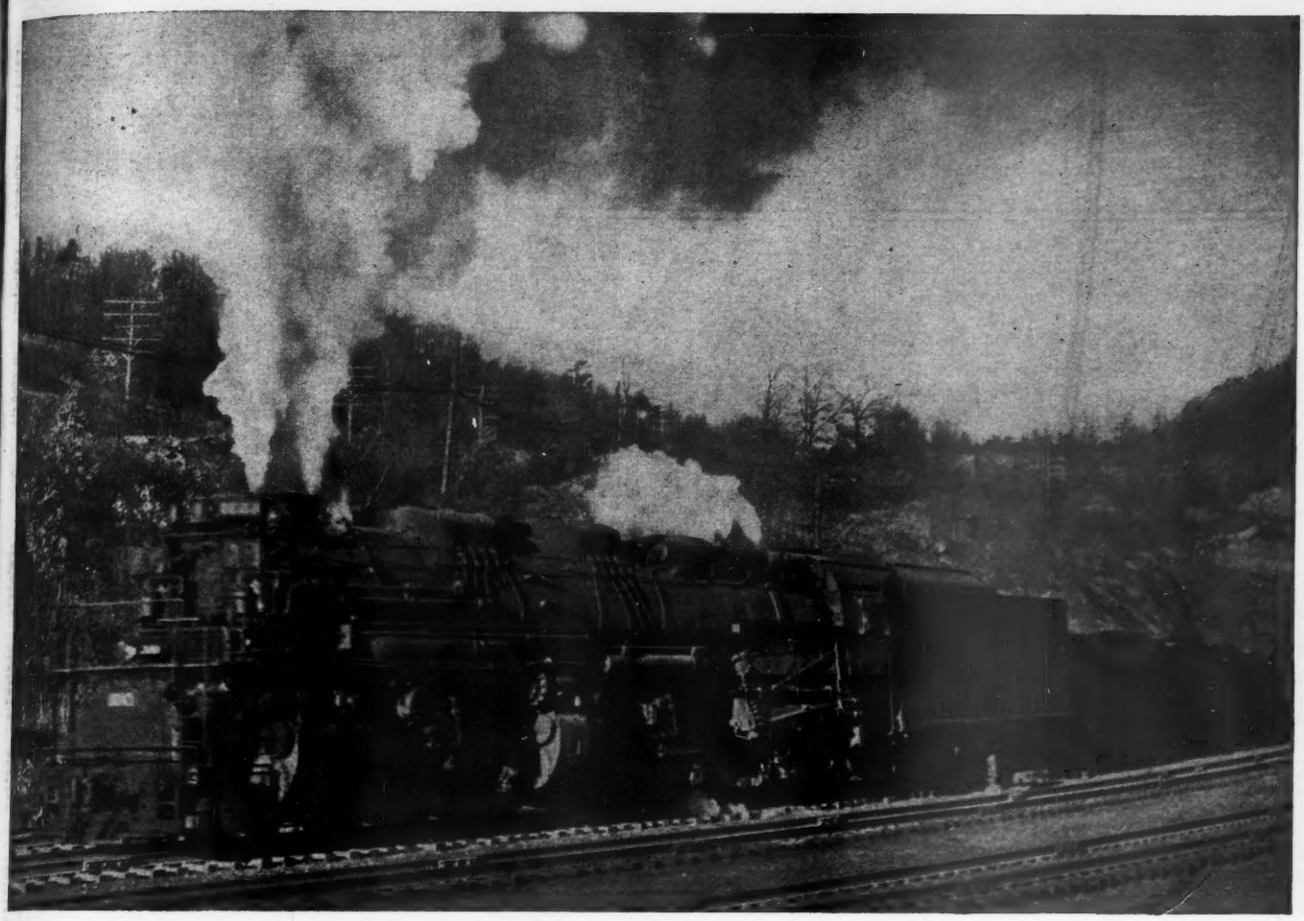
Table of Revenues and Expenses appears on the next left-hand page.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1947

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income: 1947	1946
Akron, Canton & Youngstown	Sept.	171	$386,226	$80	$403,926	$69,522	$46,614	$25,128	$125,980	$289,308	71.6	$114,618	$45,456	$49,609	$63,611
	9 mos.	171	3,638,353	835	3,819,023	628,444	389,155	221,289	1,189,663	2,615,627	68.5	1,203,396	478,509	572,246	243,552
Atchison, Topeka & Santa Fe System	Sept.	13,107	31,670,958	3,879,483	38,757,218	6,066,664	7,536,894	899,607	13,515,619	29,757,729	76.8	8,999,489	5,159,304	4,263,413	4,518,547
	9 mos.	13,107	265,972,050	37,935,396	332,204,303	48,800,738	62,435,816	7,280,083	113,776,940	246,545,586	74.2	85,658,717	47,388,112	38,100,554	34,416,289
Atlanta & St. Andrews Bay	Sept.	82	122,834	1,519	129,672	14,369	12,340	5,374	38,459	79,630	61.4	50,042	23,606	17,171	33,647
	9 mos.	82	1,296,578	12,674	1,355,185	159,746	127,511	53,753	374,471	809,296	59.7	545,889	248,960	214,541	127,317
Atlanta & West Point	Sept.	93	281,590	42,417	356,170	33,351	46,684	13,569	172,213	287,808	80.8	68,362	30,642	13,305	32,149
	9 mos.	93	2,238,741	449,989	3,028,715	381,377	434,824	116,856	1,493,965	2,615,412	86.4	413,303	204,972	7,180	132,655
Western of Alabama	Sept.	133	274,962	41,110	345,312	32,390	54,510	13,060	156,390	275,872	79.9	69,440	40,424	24,383	25,582
	9 mos	133	2,196,845	468,743	2,950,298	348,502	499,909	111,930	1,285,421	2,411,311	81.7	538,987	334,895	191,786	244,816
Atlantic Coast Line	Sept.	5,573	6,695,614	1,351,371	8,707,949	2,334,427	1,924,021	268,900	4,208,902	9,186,984	105.5	—479,035	700,000	—1,129,402	757,107
	9 mos.	5,573	70,789,511	17,530,168	95,605,469	20,669,680	16,949,127	2,352,322	40,498,083	84,781,137	88.7	10,824,332	7,900,000	948,216	—249,421
Charleston & Western Carolina	Sept.	343	321,180	8,071	339,100	80,407	80,005	13,428	146,809	330,885	97.6	8,215	20,000	—18,829	—12,920
	9 mos.	343	3,249,653	30,920	3,375,017	633,521	653,514	114,969	1,346,382	2,831,580	83.9	543,437	250,000	231,266	—112,245
Baltimore & Ohio	Sept.	6,194	25,047,347	1,898,216	28,658,383	3,994,329	6,551,742	711,914	13,330,575	25,931,818	90.5	2,726,565	1,152,707	1,082,289	2,013,419
	9 mos.	6,194	229,934,878	18,043,753	263,663,711	33,477,251	56,613,494	6,045,021	112,549,776	220,045,688	83.5	43,618,023	18,544,998	21,678,027	2,153,107
Staten Island Rapid Transit	Sept.	29	140,958	108,367	263,599	47,296	37,541	1,370	147,192	259,842	98.6	3,757	41,866	—61,549	13,456
	9 mos.	29	1,319,712	992,105	2,430,762	416,805	314,906	14,903	1,355,349	2,317,581	95.3	113,181	372,029	—415,255	—293,415
Bangor & Aroostook	Sept.	602	521,950	59,973	605,227	211,200	141,528	7,728	214,502	613,901	101.4	—8,674	45,716	—41	—99,344
	9 mos.	602	8,149,139	465,682	8,873,465	2,005,375	1,581,558	69,022	2,687,398	6,698,463	75.5	2,175,002	1,094,070	1,119,351	422,132
Bessemer & Lake Erie	Sept.	214	2,034,375	1,593	2,050,111	165,136	466,501	18,857	445,831	1,149,195	56.1	900,916	495,175	706,326	771,164
	9 mos.	214	16,717,199	14,192	16,868,797	1,236,844	4,024,251	154,772	3,669,722	9,521,221	56.4	7,347,576	4,047,783	5,791,019	2,975,096
Boston & Maine	Sept.	1,759	5,070,930	1,274,831	6,939,304	1,176,652	1,139,213	91,414	2,966,132	5,703,210	82.2	1,236,094	625,837	310,204	401,491
	9 mos.	1,762	44,391,831	11,634,971	61,637,923	10,103,786	9,586,239	889,014	25,655,836	48,841,987	79.2	12,795,936	6,037,077	4,203,562	2,127,133
Burlington-Rock Island	Sept.	228	189,624	57,962	286,779	52,699	33,250	4,204	128,624	238,325	83.1	48,454	10,717	—5,911	—32,479
	9 mos.	228	2,155,800	489,240	2,904,583	377,837	344,431	37,452	1,287,913	2,207,776	76.0	696,807	95,731	147,203	126,923
Cambria & Indiana	Sept.	35	143,776	.....	143,661	13,263	91,357	711	24,168	137,481	95.70	6,180	72,748	52,933	72,882
	9 mos.	35	1,215,644	.....	1,216,038	120,176	814,475	6,004	197,865	1,208,800	99.40	7,238	517,380	342,019	495,437
Canadian Pacific Lines in Maine	Sept.	90	129,756	25,082	179,005	55,180	30,711	5,632	134,693	232,352	129.8	— 53,347	17,855	—113,282	—94,958
	9 mos.	90	1,225,357	174,135	1,578,820	394,467	262,400	43,770	1,221,970	1,977,292	125.2	—398,472	148,273	—932,289	—1,024,296
Canadian Pacific Lines in Vermont	Sept.	234	248,672	39,198	310,907	118,521	58,676	8,193	132,079	329,571	106.0	—18,664	23,074	—89,000	—114,050
	9 mos.	234	3,533,415	340,934	4,092,325	720,905	634,930	63,780	1,629,733	3,156,188	77.1	936,137	223,821	64,568	—88,254
Central of Georgia	Sept.	1,816	2,053,433	253,437	2,494,764	403,620	415,890	103,143	1,323,743	2,411,689	96.7	83,075	246,194	—113,385	150,906
	9 mos.	1,816	19,270,655	2,228,755	23,630,628	3,981,066	4,067,310	885,385	11,791,989	22,094,171	93.5	1,536,457	2,204,147	—516,777	448,413
Central of New Jersey	Sept.	418	2,389,155	554,656	3,150,432	574,065	526,812	56,787	1,622,922	2,948,751	93.6	201,681	433,857	—529,354	—300,350
	9 mos.	418	21,226,340	4,415,227	27,795,506	3,898,186	4,797,081	458,212	14,245,993	24,868,096	89.5	2,927,410	3,498,581	—3,056,668	—1,740,825
Central of Pennsylvania	Sept.	213	1,437,560	18,068	1,482,181	148,122	307,943	23,441	486,068	1,003,773	67.7	478,408	65,038	601,538	573,744
	9 mos.	213	12,908,599	170,298	13,345,237	1,163,158	2,485,441	196,576	4,329,158	8,540,938	64.0	4,804,299	594,351	5,912,166	1,205,188
Central of Vermont	Sept.	422	576,000	95,000	716,938	145,289	112,317	11,462	336,165	646,129	90.1	70,809	54,090	—27,902	—9,575
	9 mos.	422	5,750,000	759,000	7,049,139	1,201,092	1,183,319	106,514	3,016,913	5,809,411	82.4	1,239,728	474,548	327,056	—496,462
Chesapeake & Ohio	Sept.	5,054	24,450,275	1,088,532	26,834,188	4,165,139	4,920,432	707,983	5,766,568	20,670,236	77.0	6,163,952	3,263,400	3,256,820	4,471,380
	9 mos.	5,056	209,144,950	9,204,777	228,951,934	31,998,259	40,497,605	5,281,060	79,966,869	166,824,119	72.9	62,127,815	31,537,206	33,153,253	25,313,947
Chicago & Eastern Illinois	Sept.	910	1,783,178	299,614	2,284,592	314,569	527,535	86,164	1,059,012	2,129,147	93.2	155,445	137,400	—105,661	—109,423
	9 mos.	910	15,694,943	2,916,862	20,654,444	2,874,271	4,038,337	702,418	9,151,629	17,881,860	86.6	2,772,584	1,480,500	315,537	—1,411,434
Chicago & Illinois Midland	Sept.	131	656,353	1,031	699,457	89,890	114,671	23,397	184,745	445,796	63.7	253,661	112,390	142,181	92,936
	9 mos.	131	5,522,168	8,897	5,864,189	799,432	1,040,552	208,365	1,562,373	3,884,416	66.2	1,979,773	885,828	1,089,516	514,708
Chicago & North Western	Sept.	8,064	11,864,111	2,182,866	15,604,828	2,345,845	3,011,332	311,168	6,794,068	13,221,272	84.7	2,383,556	1,464,994	417,501	1,985,116
	9 mos.	8,064	96,159,526	18,658,392	128,750,057	19,781,152	24,820,138	2,507,263	56,517,678	109,628,780	85.1	19,121,277	10,463,279	5,442,504	5,703,105
Chicago, Burlington & Quincy	Sept.	8,860	16,062,825	1,592,180	19,280,044	3,250,012	2,371,669	367,791	6,655,675	13,298,509	69.0	5,981,535	2,828,792	2,699,846	2,320,556
	9 mos.	8,865	130,707,126	13,432,732	158,167,559	23,053,519	20,604,390	3,337,838	54,296,681	106,659,731	67.4	51,507,828	24,730,629	23,391,718	20,497,279
Chicago Great Western	Sept.	1,500	2,354,211	55,706	2,611,955	461,002	367,391	89,953	1,163,275	2,174,842	83.3	437,113	63,431	180,730	126,900
	9 mos.	1,500	19,843,320	711,862	22,287,601	3,471,317	3,103,609	712,379	10,053,138	18,104,152	81.2	4,183,449	1,159,138	1,375,239	—220,566
Chicago, Indianapolis & Louisville	Sept.	541	1,165,076	81,563	1,327,372	142,956	188,500	63,914	551,138	1,019,436	76.8	307,936	89,026	103,031	13,988
	9 mos.	541	9,750,701	604,978	11,055,399	2,086,745	1,624,823	519,670	4,656,308	9,576,683	86.6	1,478,716	720,013	—214,567	—502,241
Chicago, Milwaukee, St. Paul & Pacific	Sept.	10,685	16,497,233	1,758,134	20,186,697	3,624,255	3,258,820	362,039	8,426,649	16,613,693	82.3	3,573,004	1,634,000	1,123,328	1,841,472
	9 mos.	10,722	134,043,749	16,028,504	166,357,755	29,021,994	26,669,838	3,427,754	69,394,434	135,933,024	81.7	30,424,731	14,696,000	10,766,272	6,629,401
Chicago, Rock Island & Pacific	Sept.	7,654	11,275,565	1,994,020	14,331,966	2,202,595	2,242,048	415,951	5,440,547	11,013,198	76.8	3,318,768	1,250,781	1,390,503	1,108,209
	9 mos.	7,651	104,801,146	17,197,376	131,810,574	16,960,659	20,830,875	3,597,613	49,613,632	97,112,871	73.7	34,697,703	12,533,079	15,768,502	12,157,764
Chicago, St. Paul, Minn. & Omaha	Sept.	1,616	2,368,728	265,898	2,845,149	418,120	409,757	54,426	1,288,814	2,280,864	80.2	564,285	209,898	197,920	462,617
	9 mos.	1,616	18,627,715	2,062,547	22,697,397	3,349,362	3,303,037	462,488	10,647,278	19,178,898	84.5	3,518,499	1,747,957	739,817	—630,167
Clinchfield	Sept.	317	1,362,328	5,530	1,376,454	152,277	256,061	29,867	449,642	914,682	66.5	461,772	193,616	329,428	285,294
	9 mos.	309	12,683,573	59,759	12,853,557	1,066,260	2,115,071	217,586	3,482,006	7,130,857	55.6	5,702,720	1,379,051	3,060,933	2,111,626

Table continued on next left-hand page.



Reduced running time

means increased availability

Lima-built steam locomotives have shown what modern steam power can do to decrease running time and increase availability and freight revenues.

Typical of the latest Lima-built power is the 2-6-6-6 illustrated above. This 10,000 ton coal train is effectively proving that operating efficiency backed up by modern motive power is capable of handling today's increased loads at today's higher speeds.

LIMA HAMILTON CORPORATION

LIMA, OHIO
Lima Locomotive Division
Lima Shovel and Crane Division

LIMA-HAMILTON CORPORATION

HAMILTON, OHIO
Hooven, Owens, Rentschler Co.
Niles Tool Works Co.

REVENUES AND EXPENSES OF RAILWAYS

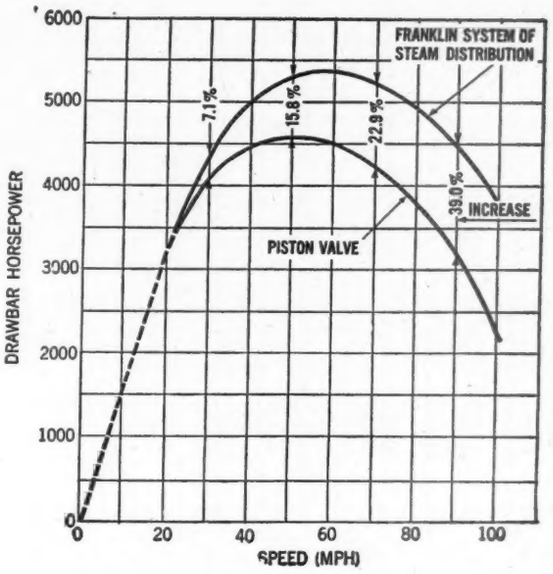
MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1947—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1947	1946
Colorado & Southern	Sept.	745	$1,049,829	$112,460	$1,255,990	$160,051	$190,134	$26,596	$490,219	$915,824	72.9	$340,166	$165,145	$128,199	—$44,138
	9 mos.	747	7,128,682	935,277	8,887,897	1,448,314	1,631,239	198,962	3,736,834	7,434,857	83.7	1,453,040	961,457	301,565	188,391
Ft. Worth & Denver City	Sept.	902	804,231	189,592	1,081,567	202,924	159,897	33,649	409,953	870,338	80.5	211,229	81,227	83,135	1,795
	9 mos.	902	8,582,927	1,425,086	10,810,691	1,402,447	1,445,278	304,983	3,788,466	7,517,712	69.5	3,292,979	1,241,467	1,626,211	559,970
Colorado & Wyoming	Sept.	42	113,240	.....	178,141	9,661	20,049	1,791	67,527	104,756	58.8	73,385	38,215	35,181	21,043
	9 mos.	42	868,074	.....	1,475,072	92,773	147,115	8,411	554,605	855,392	57.9	619,680	330,628	292,508	189,826
Columbus & Greenville	Sept.	168	123,614	2,999	134,878	28,495	23,387	4,742	41,831	113,746	84.3	21,132	10,964	14,252	—10,516
	9 mos.	168	1,098,908	28,568	1,215,260	357,501	230,567	44,991	491,924	1,264,955	104.1	—49,695	116,493	—140,175	35,809
Delaware & Hudson	Sept.	794	4,004,384	226,906	4,344,065	651,485	939,527	62,609	1,669,053	3,486,883	80.3	857,182	474,352	399,878	666,714
	9 mos.	794	35,878,658	1,850,794	38,924,430	4,905,064	8,264,797	536,764	14,805,801	29,891,271	76.8	9,033,159	4,740,342	4,317,040	2,622,639
Delaware, Lackawanna & Western	Sept.	973	5,256,340	825,879	6,621,962	926,859	1,018,433	130,853	3,106,955	5,402,034	81.6	1,219,928	624,391	548,723	256,294
	9 mos.	973	46,576,365	7,604,647	59,285,297	7,377,516	9,428,691	1,177,743	26,794,477	46,682,957	78.7	12,602,340	5,914,448	5,955,391	2,580,269
Denver & Rio Grande Western	Sept.	2,467	4,897,123	238,258	5,351,873	570,999	786,124	128,430	2,133,004	3,866,750	72.3	1,485,123	713,813	684,733	638,180
	9 mos.	2,469	37,524,941	2,483,079	41,875,728	5,311,818	8,182,532	1,166,662	15,670,172	32,386,776	77.3	9,488,952	4,536,596	5,393,400	2,980,945
Detroit & Mackinac	Sept.	230	156,628	1,357	169,773	21,612	15,229	1,204	36,640	80,772	47.6	89,001	32,875	48,114	20,952
	9 mos.	230	1,186,994	16,005	1,309,209	260,782	138,583	11,009	297,242	760,338	58.1	548,871	207,258	299,865	134,658
Detroit & Toledo Shore Line	Sept.	50	370,139	.....	372,199	70,866	29,614	10,956	128,289	249,693	67.1	122,506	32,564	20,071	48,809
	9 mos.	50	4,056,782	.....	4,075,627	428,351	322,960	100,697	1,221,006	2,163,494	53.1	1,912,133	591,378	630,911	320,463
Detroit, Toledo & Ironton	Sept.	464	933,685	831	974,597	139,396	186,423	19,515	273,571	651,570	66.9	323,027	139,279	172,610	225,986
	9 mos.	464	9,283,028	8,560	9,694,810	1,108,233	1,483,758	171,216	2,528,594	5,578,455	57.5	4,116,355	1,672,152	2,218,703	1,219,161
Duluth, Missabe & Iron Range	Sept.	548	4,692,018	3,550	5,491,939	461,922	420,490	7,427	1,351,281	2,294,532	41.8	3,197,407	1,437,032	1,752,308	1,887,686
	9 mos.	547	26,533,090	28,180	30,960,257	3,733,514	3,609,536	63,797	7,761,872	15,625,804	50.5	15,533,453	7,033,960	8,247,972	6,203,664
Duluth, Winnipeg & Pacific	Sept.	175	320,000	1,300	327,600	68,228	46,714	3,010	122,407	245,270	74.9	82,330	29,092	27,983	—57,210
	9 mos.	175	2,604,000	15,900	2,667,100	514,447	333,307	26,950	1,065,929	1,990,909	74.6	676,191	234,489	157,168	—263,280
Elgin, Joliet & Eastern	Sept.	391	2,652,950	6	3,111,564	289,736	476,645	23,283	1,276,475	2,169,746	69.7	941,818	434,050	320,432	180,258
	9 mos.	391	23,852,133	65	28,264,613	2,108,402	3,940,412	191,717	10,961,363	17,996,540	63.7	10,268,073	4,139,913	4,005,020	534,903
Erie	Sept.	2,229	11,272,147	608,674	12,666,419	1,715,608	2,231,099	286,473	5,878,484	10,732,935	84.7	1,933,484	888,165	450,451	1,483,121
	9 mos.	2,229	97,834,353	5,395,602	110,724,247	12,775,792	19,657,338	2,408,239	48,801,150	88,873,552	80.2	21,950,695	9,694,193	7,473,775	1,440,461
Florida East Coast	Sept.	575	1,185,231	462,800	1,790,484	509,153	422,134	57,136	727,450	1,847,964	103.2	—57,480	163,036	—279,937	—269,848
	9 mos.	611	12,390,258	6,107,268	20,365,031	4,122,904	3,511,766	534,425	7,708,126	17,320,266	85.0	3,044,765	1,478,858	618,828	1,897,044
Georgia Railroad	Sept	326	573,229	32,703	642,023	79,681	99,375	28,556	330,070	564,290	87.9	77,733	46,231	54,239	34,237
	9 mos.	328	5,170,062	273,137	5,822,983	774,392	944,485	240,806	2,896,960	5,079,915	87.2	743,068	416,801	482,651	82,970
Georgia & Florida	Sept.	408	165,077	2,483	173,232	56,732	30,937	12,995	84,296	193,815	111.9	—20,583	16,060	—45,796	—38,628
	9 mos.	408	1,841,733	21,744	1,916,919	502,562	257,885	110,042	800,343	1,750,518	91.3	166,401	146,083	—96,049	—72,795
Grand Trunk Western	Sept.	972	3,363,000	172,000	3,747,000	734,893	746,141	48,943	1,723,538	3,393,052	90.6	353,948	268,767	—112,801	—763,199
	9 mos.	972	29,364,000	1,710,000	33,368,000	5,127,737	5,585,567	453,057	14,752,014	27,078,919	81.2	6,289,081	2,211,471	2,591,440	—2,545,235
Canadian Nat'l Lines in New England	Sept.	172	178,000	12,000	209,500	79,990	46,970	2,566	127,261	265,517	126.7	—56,017	25,558	—118,557	—115,047
	9 mos.	172	1,377,000	120,400	1,611,100	565,019	325,291	22,888	983,258	1,978,115	122.8	—367,015	230,022	—858,051	—924,344
Great Northern	Sept.	8,333	16,655,067	1,096,118	19,157,833	2,589,114	2,615,091	331,418	6,500,103	12,666,461	66.1	6,491,372	2,713,559	3,281,165	3,650,526
	9 mos.	8,333	116,568,409	9,859,177	137,734,942	23,581,290	23,318,223	2,824,459	49,139,941	103,994,384	75.5	33,740,558	17,235,113	15,494,988	12,740,956
Green Bay & Western	Sept.	234	243,844	39	251,435	99,731	29,644	15,862	87,751	246,498	98.0	4,937	25,032	—31,624	57,046
	9 mos.	234	2,245,265	352	2,299,406	591,789	248,092	130,885	752,467	1,835,472	79.8	463,934	276,672	82,266	55,919
Gulf, Mobile & Ohio	Sept.	2,904	5,213,593	552,352	6,172,502	1,110,509	1,065,563	205,641	2,034,787	4,712,759	76.4	1,459,743	581,134	493,851	36,226
	9 mos.	2,904	44,583,195	5,108,966	53,627,353	9,208,850	8,949,888	1,754,537	17,443,207	40,269,457	75.1	13,357,896	4,950,651	5,136,362	—1,017,381
Illinois Central (System)	Sept.	6,581	15,404,484	2,344,094	19,502,872	3,726,971	3,616,532	363,006	7,393,286	16,020,079	82.1	3,482,793	2,059,061	1,184,286	1,543,542
	9 mos.	6,582	140,469,186	19,170,784	177,151,029	29,071,066	31,127,230	3,148,854	63,244,808	134,342,785	75.8	42,808,244	22,018,664	18,246,370	11,601,712
Illinois Terminal	Sept.	474	800,679	122,599	1,034,561	134,927	127,610	28,636	358,144	684,617	66.2	349,944	156,062	168,695	123,852
	9 mos.	475	6,626,269	1,155,134	8,674,104	1,120,444	1,116,541	240,814	3,089,986	5,867,112	67.6	2,806,992	1,226,651	1,291,224	629,678
Kansas City Southern	Sept.	890	2,469,943	112,834	2,812,974	278,119	363,111	76,277	843,358	1,670,544	59.4	1,142,430	342,000	658,044	487,205
	9 mos.	890	22,740,138	904,940	25,684,961	2,807,215	3,337,804	662,967	7,734,684	15,541,424	60.5	10,143,537	3,392,000	5,255,550	3,904,291
Kansas, Oklahoma & Gulf	Sept.	328	363,257	1,020	367,558	70,859	26,663	14,241	109,588	239,536	65.2	128,022	49,537	51,020	52,412
	9 mos.	328	3,617,106	10,797	3,661,738	428,367	280,799	127,039	1,017,348	1,994,833	54.5	1,666,905	634,064	752,395	502,668
Lake Superior & Ishpeming	Sept.	156	376,323	62	466,279	54,115	38,234	1,447	102,187	204,849	43.9	261,430	119,321	147,232	82,887
	9 mos.	156	2,276,930	766	2,829,486	368,225	348,174	13,700	654,702	1,460,718	51.6	1,368,768	690,940	723,014	107,790
Lehigh & Hudson River	Sept.	96	234,679	.....	235,510	45,034	31,124	7,225	81,399	171,970	73.0	63,540	26,380	13,373	21,409
	9 mos.	96	2,243,251	.....	2,251,561	394,653	310,372	63,046	773,714	1,611,754	71.6	639,807	262,754	175,591	155,309
Lehigh & New England	Sept.	193	749,617	.....	754,900	76,014	99,938	9,821	214,427	424,854	56.3	330,046	147,275	184,952	129,323
	9 mos.	193	5,257,934	.....	5,313,166	620,630	855,634	91,968	1,682,974	3,471,991	65.3	1,841,175	897,541	1,053,759	845,138
Lehigh Valley	Sept.	1,252	5,373,597	336,766	6,024,195	885,273	1,054,450	133,468	2,840,976	5,163,806	85.7	860,389	499,667	172,241	660,920
	9 mos.	1,253	46,964,372	3,399,931	53,839,541	7,219,614	8,934,707	1,168,698	24,907,611	44,389,576	82.4	9,449,965	4,232,661	3,738,613	3,422,922
Louisiana & Arkansas	Sept.	756	1,256,242	89,054	1,394,399	161,015	127,958	40,771	444,197	820,711	58.9	573,688	257,945	201,967	212,460
	9 mos.	756	10,972,973	478,279	11,909,426	1,635,320	1,250,936	354,427	3,704,917	7,341,843	61.6	4,567,581	1,951,914	1,763,591	1,524,247

Table continued on next left-hand page.

MORE POWER

This curve shows a comparison of horsepower at rear of tender for a modern locomotive when equipped with piston valves and when equipped with the Franklin System of Steam Distribution. In both cases, steam consumption by the engine is 90,000 lbs. per hour.



Computations based on:

Type 4-8-4

Cylinders 25" x 32"

Driving Wheels 80"

Boiler Pressure 300 lb

Steam Temperature 730° F

Total Heating Surface 4225 sq ft

Grate Area 100.2 sq ft

from a locomotive equipped with the Franklin System of Steam Distribution

This curve shows the improvement in horsepower output that may be expected from a modern locomotive when it is equipped with the Franklin System of Steam Distribution.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO • MONTREAL

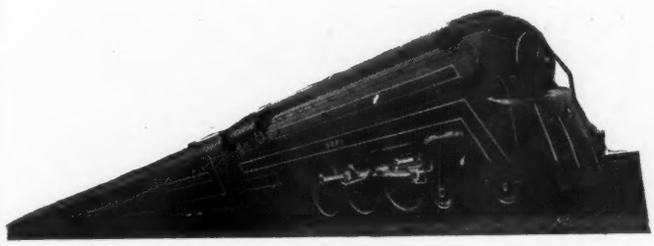
STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1947—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1947	1946
Louisville & Nashville	Sept.	4,766	$13,243,366	$1,277,759	$15,320,626	$2,483,609	$3,371,531	$284,319	$6,563,965	$13,294,678	86.8	$2,025,948	$1,943,870	$921,698	$1,571,113
	9 mos.	4,767	118,243,755	11,859,851	138,471,270	19,232,434	29,310,850	2,455,843	57,523,011	113,519,799	82.0	24,951,471	17,927,327	11,861,902	11,021,793
Maine Central	Sept.	988	1,469,491	214,802	1,798,855	371,698	354,328	17,291	740,250	1,549,699	86.2	249,156	146,125	94,122	155,484
	9 mos.	988	14,225,712	1,896,889	17,209,370	2,943,870	2,960,735	156,848	6,705,256	13,330,769	77.5	3,878,601	1,817,047	1,516,336	971,659
Midland Valley	Sept.	334	165,968	19	170,397	38,464	22,646	2,943	51,002	121,839	71.5	48,558	25,309	18,269	17,546
	9 mos.	334	1,413,582	130	1,442,135	327,049	145,197	26,887	450,052	1,005,908	69.8	436,227	191,438	186,915	81,869
Minneapolis & St. Louis	Sept.	1,408	1,597,626	9,445	1,657,100	263,721	237,973	92,559	560,836	1,234,004	74.5	423,096	226,132	193,290	130,976
	9 mos.	1,408	12,728,830	96,763	13,301,278	1,991,874	2,067,596	810,062	4,427,875	9,976,694	75.0	3,324,584	1,757,177	1,372,845	—113,063
Minneapolis, St. Paul & S. S. Marie	Sept.	3,224	3,122,620	154,303	3,458,641	524,787	461,765	55,538	1,270,030	2,415,405	69.8	1,043,236	460,265	513,612	380,017
	9 mos.	3,224	20,059,007	1,225,239	22,780,816	4,433,701	3,887,437	487,067	9,863,156	19,525,711	85.7	3,255,105	2,150,925	957,184	—353,533
Duluth, South Shore & Atlantic	Sept.	530	443,215	16,054	488,117	162,791	81,035	15,854	185,072	453,520	92.9	34,597	31,066	—28,527	626
	9 mos.	530	3,663,446	115,988	4,011,971	831,231	632,666	133,970	1,592,284	3,275,168	81.6	736,803	245,956	352,363	—68,467
Spokane International	Sept.	152	137,116	1,704	149,896	25,971	14,437	3,462	53,764	104,633	69.8	45,263	17,115	15,719	22,786
	9 mos.	152	1,336,672	15,286	1,437,664	317,897	147,034	33,290	505,553	1,071,540	74.5	366,124	135,629	120,851	107,499
Mississippi Central	Sept.	148	130,282	—149	133,423	27,643	15,317	10,485	37,968	98,419	73.8	35,004	11,254	11,594	24,921
	9 mos.	148	1,264,477	—829	1,299,029	317,822	150,713	94,535	334,185	962,827	74.1	336,202	109,958	113,658	59,487
Missouri & Arkansas	Sept.	.....	.....	.....	.....	.....	.....	Not Yet Filed		.....	...	.....	.....	.....	.....
	9 mos.	.....	.....	.....	.....	.....	.....	Not Yet Filed		.....	...	.....	.....	.....	.....
Missouri-Illinois	Sept.	172	376,334	351	378,201	65,404	39,919	6,251	113,594	232,847	61.6	145,354	55,222	60,733	66,535
	9 mos.	172	2,980,182	3,224	3,008,195	504,178	322,162	53,508	829,675	1,773,571	58.9	1,234,624	516,592	568,475	456,394
Missouri-Kansas-Texas Lines	Sept.	3,253	4,818,137	384,476	5,662,468	1,018,199	828,794	215,094	2,345,760	4,681,606	82.7	980,862	461,532	281,551	243,860
	9 mos.	3,253	42,604,119	3,738,909	50,413,954	7,844,896	7,196,698	1,801,860	20,065,371	39,210,076	77.8	11,203,878	4,826,218	4,034,028	3,264,960
Missouri Pacific	Sept.	7,011	13,811,555	1,254,534	16,331,909	2,967,219	3,044,623	383,137	6,615,522	13,672,558	83.7	2,659,351	1,100,986	872,913	2,144,487
	9 mos.	7,037	122,255,526	11,919,267	145,917,768	21,899,404	25,214,700	3,298,985	56,846,731	112,776,446	77.3	33,141,322	10,953,253	15,752,011	12,949,609
Gulf Coast Lines	Sept.	1,734	2,523,861	113,220	2,773,773	601,891	407,629	74,793	1,030,864	2,226,731	80.3	547,042	156,284	218,588	216,507
	9 mos.	1,734	28,049,293	825,467	30,195,007	5,558,570	3,506,956	621,613	9,904,248	20,565,917	68.1	9,629,090	2,493,266	4,652,919	5,029,348
International-Great Northern	Sept.	1,110	2,095,477	227,055	2,561,066	469,307	437,082	43,295	1,076,282	2,152,562	84.1	408,504	148,908	119,126	—18,398
	9 mos.	1,110	17,440,568	2,035,900	21,801,690	3,964,971	3,445,055	405,402	9,523,022	18,417,172	84.5	3,384,518	1,201,610	838,755	256,105
Monongahela	Sept.	170	630,098	1,277	634,596	78,284	61,901	828	194,788	339,892	53.6	294,704	99,720	72,728	141,427
	9 mos.	170	6,051,420	12,026	6,101,475	600,473	567,265	7,366	1,718,566	2,936,845	48.1	3,164,630	877,046	1,336,740	633,720
Montour	Sept.	51	235,970	.....	237,327	38,415	73,760	681	84,818	207,867	87.6	29,460	34,778	36,510	69,074
	9 mos.	51	2,319,263	.....	2,334,645	227,321	582,089	9,087	794,795	1,690,979	72.4	643,666	482,996	552,765	325,601
Nashville, Chattanooga & St. Louis	Sept.	1,052	2,089,512	172,509	2,486,547	493,206	492,352	104,806	1,126,980	2,335,957	93.9	150,590	163,467	5,259	—103,063
	9 mos.	1,052	18,989,482	1,772,274	22,858,996	3,833,942	4,027,865	865,584	9,656,205	19,387,247	84.8	3,471,749	2,213,691	1,240,724	—579,908
New York Central	Sept.	10,746	39,924,487	10,913,655	56,393,242	9,771,359	12,633,335	965,526	26,092,661	52,421,955	93.0	3,971,287	5,173,562	—2,511,763	635,263
	9 mos.	10,746	361,468,616	96,507,586	509,621,375	70,406,510	105,414,562	8,263,769	226,307,519	434,651,853	85.3	74,969,522	44,604,385	16,014,239	12,800,558
Pittsburgh & Lake Erie	Sept.	223	2,951,029	94,462	3,217,701	472,096	888,091	52,677	1,168,944	2,734,657	85.0	483,044	584,619	595,400	398,699
	9 mos.	223	25,516,165	883,615	27,580,800	3,465,315	7,474,789	494,006	10,113,825	22,854,105	82.9	4,726,695	4,804,354	5,264,054	2,304,622
New York, Chicago & St. Louis	Sept.	1,687	7,154,743	136,211	7,478,063	997,343	1,381,381	182,481	2,864,158	5,691,069	76.1	1,786,994	668,925	629,997	997,631
	9 mos.	1,687	64,318,332	1,183,535	67,110,140	8,458,222	11,281,341	1,614,825	25,477,530	49,290,959	73.4	17,819,181	7,043,462	7,015,622	6,063,338
New York, New Haven & Hartford	Sept.	1,843	6,680,390	4,778,656	12,555,999	1,998,227	1,880,025	225,651	5,599,134	10,638,581	84.7	1,917,418	803,000	105,932	801,908
	9 mos.	1,840	61,908,568	42,280,645	114,826,731	17,178,762	16,659,175	2,109,970	49,363,973	93,404,565	81.3	21,422,166	8,133,000	4,086,184	124,525
New York Connecting	Sept.	21	147,019	.....	160,492	219,443	17,188	.....	51,525	290,347	180.9	—129,855	61,589	—136,104	63,863
	9 mos.	21	1,479,218	.....	1,632,027	702,242	152,721	.....	542,526	1,418,541	86.9	213,486	532,914	168,072	761,309
New York, Ontario & Western	Sept.	547	666,802	13,310	726,479	127,366	118,650	27,040	357,800	660,999	91.0	65,480	52,164	—123,786	—145,026
	9 mos.	547	5,700,285	112,447	6,328,051	1,141,557	1,040,639	236,022	3,164,209	5,836,685	92.2	491,366	463,358	—837,673	—1,154,302
New York, Susquehanna & Western	Sept.	120	308,523	40,746	358,439	33,887	38,371	5,336	157,041	258,186	72.0	100,253	38,016	18,519	51,166
	9 mos.	120	2,553,323	352,426	3,048,908	321,242	370,963	44,042	1,313,179	2,242,525	73.5	806,383	313,648	185,247	31,821
Norfolk & Western	Sept.	2,130	12,905,870	540,596	13,967,669	1,890,877	2,607,941	262,584	4,371,349	9,608,523	68.8	4,359,146	2,575,406	2,704,726	2,349,703
	9 mos.	2,130	111,541,130	5,033,800	120,944,313	15,223,201	23,065,600	2,055,604	35,737,117	79,872,080	66.0	41,072,233	23,160,093	25,243,307	17,257,845
Norfolk Southern	Sept.	727	713,456	5,705	740,574	139,270	75,255	41,465	288,076	589,867	79.6	150,707	49,559	60,348	17,283
	9 mos.	727	6,197,180	51,022	6,440,994	1,456,354	696,324	359,752	2,496,241	5,399,173	83.8	1,041,821	455,591	260,506	—9,692
Northern Pacific	Sept.	6,919	11,242,223	655,752	12,801,250	2,125,299	2,237,631	225,832	4,525,416	9,743,842	76.2	3,057,418	1,517,710	1,522,192	2,415,811
	9 mos.	6,920	87,196,268	5,648,022	101,066,148	18,218,395	19,642,122	2,083,670	36,490,115	81,806,255	80.9	19,259,893	11,515,185	11,766,942	7,922,096
Northwestern Pacific	Sept.	331	590,735	11,541	621,741	141,006	74,442	3,902	280,738	509,626	82.0	112,115	43,024	30,726	43,139
	9 mos.	331	4,867,017	86,031	5,143,601	1,028,803	597,403	36,286	2,264,278	4,020,318	78.2	1,123,283	344,296	462,446	—772,283
Oklahoma City-Ada-Atoka	Sept.	132	64,518	.....	65,472	21,673	2,946	1,131	19,978	48,534	74.1	16,938	5,232	2,839	—8,893
	9 mos.	132	584,393	94	595,830	155,777	26,441	10,254	190,007	409,167	68.7	186,663	58,185	46,627	35,576
Pennsylvania	Sept.	10,116	55,894,586	13,502,994	75,713,070	10,248,749	17,748,583	1,136,030	36,080,791	68,217,871	90.1	7,495,199	5,669,262	1,084,334	6,467,390
	9 mos.	10,116	491,504,024	119,752,820	666,356,824	76,362,914	149,042,274	10,284,913	318,331,149	580,079,047	87.1	86,277,777	54,166,942	24,169,778	11,048,556
Long Island	Sept.	376	1,457,219	2,938,710	4,579,020	573,380	722,818	17,287	2,206,595	3,587,400	78.3	991,620	485,310	200,781	279,520
	9 mos.	376	10,394,499	23,346,846	35,869,656	4,473,764	5,732,332	225,599	18,540,513	29,679,531	82.7	6,190,125	4,243,472	—753,474	1,130,608

Table continued on next left-hand page.



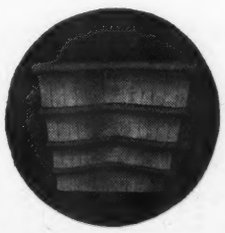
with higher speed demands

• Under today's traffic conditions, fuel economy in steam locomotive operation has become an even more vital factor than ever before.

SO the constant maintenance of a complete brick arch in the firebox is now a "must" in locomotive operation.

FOR modernizing existing power, as well as for installations in new equipment, Security Brick Arches are specifically designed for each different class of locomotive.

HARBISON-WALKER REFRACTORIES CO.
Refractories Specialists

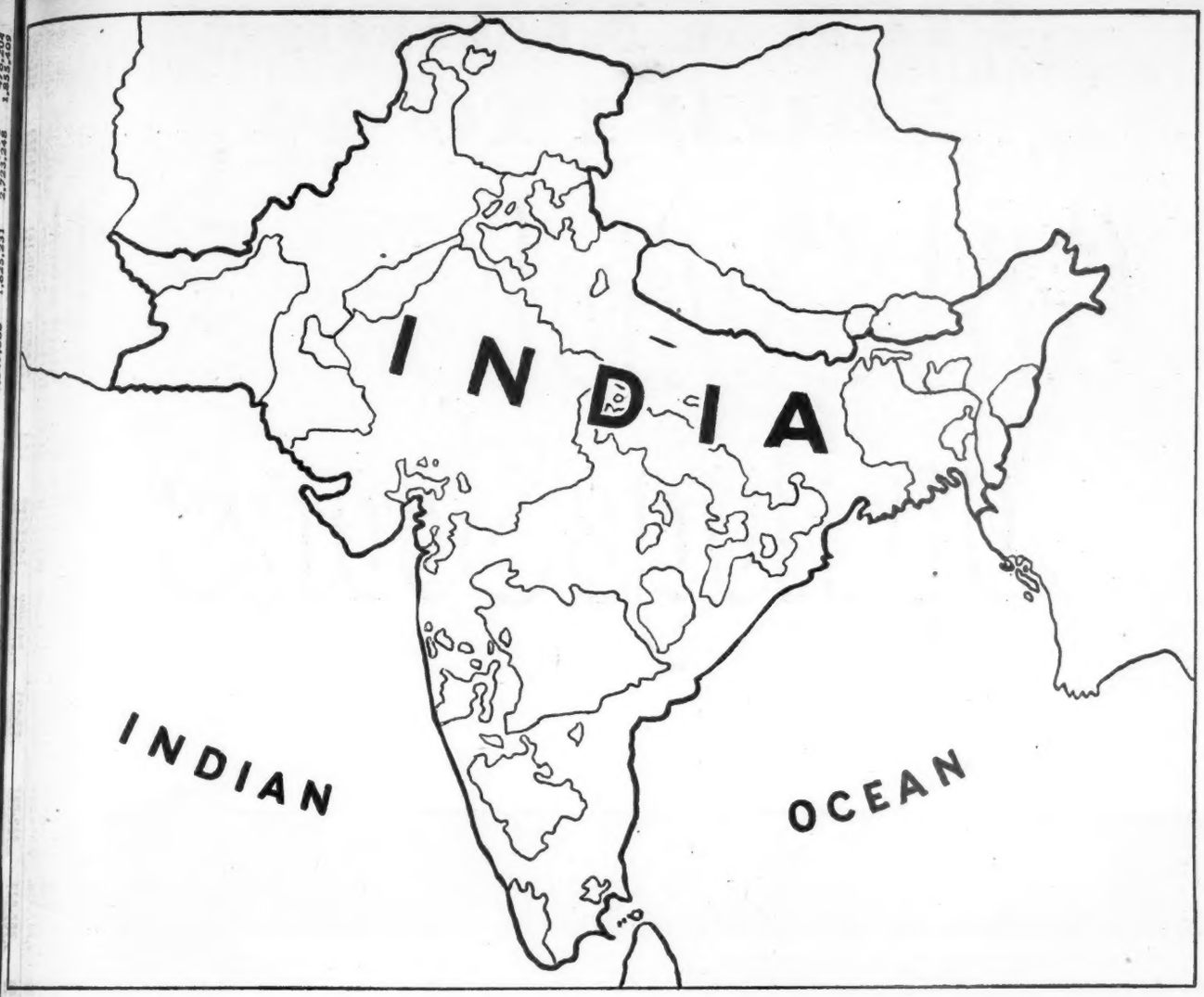


AMERICAN ARCH CO. INC.
60 East 42nd Street, New York 17, N. Y.
Locomotive Combustion Specialists

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1947—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Railway tax accruals	Net railway operating income 1947	Net railway operating income 1946
Pennsylvania-Reading Seashore Lines	Sept.	389	$539,560	$435,450	$1,023,780	$197,144	$112,804	$11,940	$593,937	$941,322	91.9	$82,458	$108,416	—$164,193	—$58,601
	9 mos.	389	4,284,658	4,400,438	9,027,792	1,684,275	1,016,794	93,132	5,102,829	8,127,926	90.0	899,866	946,428	—1,260,220	—915,158
Pittsburg & Shawmut	Sept.	97	211,065	.....	212,233	51,436	25,809	3,412	62,064	148,744	70.1	63,489	7,702	42,106	17,191
	9 mos.	97	1,835,879	.....	1,843,721	328,504	261,684	31,701	522,832	1,212,801	65.8	630,920	65,979	479,229	136,930
Pittsburgh & West Virginia	Sept.	136	549,218	.....	576,307	112,500	128,507	36,576	157,778	463,355	80.4	112,952	64,008	75,523	91,489
	9 mos.	136	4,817,591	13	5,031,824	837,111	1,022,108	308,521	1,302,998	3,740,797	74.3	1,291,027	680,302	869,776	317,392
Reading	Sept.	1,357	8,366,185	593,322	9,440,135	1,730,530	1,919,485	112,115	3,786,488	7,831,094	83.0	1,609,041	851,530	649,319	838,674
	9 mso.	1,358	74,597,996	5,642,317	85,002,177	13,121,422	16,262,807	1,008,964	33,043,770	65,796,319	77.4	19,205,858	9,847,304	8,861,251	4,903,920
Richmond, Fredricksburg & Potomac	Sept.	118	1,014,431	532,413	1,704,512	326,490	296,091	16,158	765,471	1,506,992	88.4	197,520	144,111	7,445	132,759
	9 mos.	118	10,775,911	5,574,898	18,119,637	2,100,845	2,548,241	153,916	7,216,612	13,023,394	71.9	5,096,243	2,534,089	1,919,957	2,253,978
Rutland	Sept.	407	362,351	63,694	511,727	75,926	98,459	13,934	265,951	470,859	92.0	40,868	34,986	—6,347	28,156
	9 mos.	407	3,093,989	436,396	4,271,194	731,390	854,162	127,723	2,453,753	4,333,150	101.5	—61,956	333,072	—530,144	—231,272
St. Louis-San Francisco	Sept.	4,645	7,198,441	679,206	8,520,052	1,247,364	1,391,651	225,745	3,725,247	6,986,840	82.0	1,533,212	898,501	650,498	836,763
	9 mos.	4,645	64,150,902	5,457,916	75,252,810	11,006,981	12,741,985	1,826,403	31,625,944	60,502,949	80.4	14,749,861	7,819,479	6,935,634	2,514,387
St. Louis, San Francisco & Texas	Sept.	160	309,011	11,379	339,417	44,597	28,610	16,854	140,569	246,623	72.7	92,794	31,086	32,890	—8,896
	9 mos.	160	2,783,675	113,088	3,045,083	445,523	290,462	125,864	1,327,107	2,273,395	74.7	771,688	269,498	241,453	130,353
St. Louis Southwestern Lines	Sept.	1,575	4,193,446	70,975	4,408,607	575,741	565,449	121,993	1,367,571	2,804,893	63.6	1,603,714	1,005,491	473,985	694,226
	9 mos.	1,575	37,225,546	631,153	39,132,418	5,191,487	4,676,918	1,104,478	11,721 847	24,040,017	61.4	15,092,401	6,104,525	7,568,968	4,847,438
Seaboard Air Line	Sept.	4,156	6,856,376	1,059,066	8,567,911	1,406,079	1,796,122	292,490	3,446,990	7,409,456	86.5	1,158,455	612,979	340,948	355,050
	9 mos.	4,156	69,605,403	12,425,227	88,367,727	14,233,861	15,682,986	2,451,217	34,732,490	71,489,639	80.9	16,878,088	7,435,102	6,741,885	7,439,630
Southern Railway	Sept.	6,484	14,708,212	1,867,587	17,701,519	2,580,136	3,334,702	321,689	7,065,419	14,077,080	79.5	3,624,439	1,807,438	1,493,036	1,874,974
	9 mos.	6,484	136,356,590	15,895,115	162,896,895	24,659,110	30,036,747	2,938,163	62,936,574	127,208,169	78.1	35,688,726	17,302,282	14,998,873	12,857,404
Alabama Great Southern	Sept.	316	1,189,470	145,087	1,423,308	204,733	307,490	30,140	504,528	1,099,822	77.3	323,486	208,572	159,880	78,420
	9 mos.	316	10,066,783	1,162,138	11,961,806	1,763,049	2,669,363	255,450	4,322,491	9,475,318	79.2	2,486,488	1,671,752	1,199,969	350,075
Cinn., New Orleans & Texas Pacific	Sept.	337	2,365,145	254,851	2,740,226	337,437	586,498	63,204	833,653	1,922,045	70.1	818,181	490,672	503,343	289,431
	9 mos.	337	21,966,795	2,170,539	25,371,386	2,995,242	5,210,770	478,143	7,749,041	17,326,870	68.3	8,044,516	4,449,742	4,445,851	2,674,581
Georgia Southern & Florida	Sept.	397	351,344	85,266	475,787	103,115	76,207	6,790	201,815	404,031	84.9	71,756	32,409	—8,565	—27,557
	9 mos.	397	3,353,089	817,761	4,545,477	962,560	589,982	64,244	1,793,520	3,561,214	78.3	984,263	387,278	243,329	158,427
New Orleans & Northeastern	Sept.	204	772,064	70,353	903,044	83,726	103,747	17,212	260,584	501,824	55.6	401,220	199,204	176,681	124,461
	9 mos.	204	6,684,802	579,448	7,708,832	1,061,621	904,585	151,024	2,174,622	4,609,886	59.8	3,098,946	1,423,979	1,327,334	477,164
Southern Pacific	Sept.	8,195	28,461,662	4,168,514	35,329,084	4,179,496	6,939,079	707,594	14,386,284	28,236,011	79.9	7,092,473	3,515,059	2,198,725	1,717,781
	9 mos.	8,224	244,461,040	38,543,220	306,034,877	35,171,880	54,739,713	5,817,857	121,542,895	234,584,273	76.7	71,450,604	36,051,702	23,532,363	17,722,026
Texas & New Orleans	Sept.	4,315	7,797,898	936,770	9,363,317	1,198,834	1,451,703	178,987	3,625,308	6,908,383	73.8	2,454,934	1,074,512	908,597	1,437,707
	9 mos.	4,317	69,338,698	8,576,967	83,384,372	10,236,970	11,282,403	1,632,985	30,489,186	57,503,388	69.0	25,880,984	11,106,944	10,619,058	10,377,462
Spokane, Portland & Seattle	Sept.	944	1,744,788	98,368	1,958,327	474,222	252,788	18,369	733,210	1,565,978	80.0	392,349	162,028	122,468	557,221
	9 mos.	944	14,370,169	666,477	16,085,321	3,842,331	1,928,011	157,731	5,931,338	12,580,078	78.2	3,505,243	1,437,719	1,033,908	754,405
Tennessee Central	Sept.	286	311,257	7,008	339,686	57,306	59,729	8,765	158,966	299,595	88.2	40,091	15,597	—5,020	—50,612
	9 mos.	286	2,793,050	75,081	3,052,448	546,248	625,042	82,399	1,388,033	2,774,494	90.9	277,954	175,129	—112,081	—131,013
Texas & Pacific	Sept.	1,854	4,585,731	534,800	5,530,131	814,482	899,383	161,704	2,174,841	4,364,077	78.9	1,166,054	399,463	467,958	577,182
	9 mos.	1,867	37,386,811	4,470,883	45,550,338	6,145,576	7,059,700	1,387,190	17,424,574	34,630,388	76.0	10,919,950	3,522,188	5,354,550	5,751,027
Texas Mexican	Sept.	162	181,870	93	213,076	40,643	25,115	4,893	56,842	140,511	65.9	72,565	38,206	18,131	57,709
	9 mos.	162	1,923,058	966	2,186,921	327,799	200,923	43,357	556,104	1,248,248	57.1	938,673	339,620	452,832	223,748
Toledo, Peoria & Western	Sept.	239	211,682	1	215,999	54,722	25,523	24,634	75,621	198,748	92.0	17,251	2,172	—3,265	—42,054
	9 mos.	239	889,087	16	926,026	323,062	142,459	95,723	429,000	1,117,776	120.7	—191,750	109,840	—3,746,619	—537,714
Union Pacific System	Sept.	9,774	30,904,104	4,030,232	37,477,898	4,975,017	5,992,075	686,762	13,266,453	26,959,863	71.9	10,518,035	5,356,133	3,383,641	2,616,495
	9 mos.	9,776	235,855,369	35,121,040	293,827,337	39,663,932	49,750,171	6,335,560	105,130,200	217,827,243	74.1	76,000,094	40,429,488	25,301,297	19,419,052
Utah	Sept.	111	136,508	.....	136,671	26,355	51,127	878	59,918	145,842	106.7	—9,171	14,642	—10,874	20,912
	9 mos.	111	1,406,987	.....	1,408,050	247,253	414,016	6,134	540,369	1,269,911	90.2	138,139	132,553	31,338	61,325
Virginian	Sept.	661	2,851,917	6,045	3,087,912	334,742	634,956	35,474	796,709	1,894,505	61.4	1,193,407	615,000	765,610	392,579
	9 mos.	661	25,443,430	55,663	27,138,558	2,834,525	5,818,808	307,948	6,420,555	16,074,930	59.2	11,063,628	5,364,700	6,841,019	3,732,243
Wabash	Sept.	2,393	6,755,393	462,048	7,713,769	1,223,464	1,152,838	239,375	3,029,761	5,987,721	77.6	1,726,048	673,050	611,694	506,744
	9 mos.	2,393	60,290,008	4,165,790	68,890,475	10,190,546	9,537,662	1,996,336	26,773,517	51,133,671	74.2	17,756,804	6,841,399	7,160,485	4,621,900
Ann Arbor	Sept.	294	582,919	4,275	615,032	78,469	121,214	22,267	276,628	514,803	83.7	100,229	52,079	33,578	8,341
	9 mos.	294	5,397,103	43,466	5,667,868	707,912	1,089,816	189,102	2,443,740	4,561,767	80.5	1,106,101	526,137	435,214	71,984
Western Maryland	Sept.	837	3,346,193	13,735	3,503,428	570,922	541,495	63,038	1,205,370	2,503,095	71.4	1,000,333	442,000	616,931	519,341
	9 mos.	837	29,409,275	144,356	30,900,014	4,358,308	5,307,210	553,476	10,131,772	21,394,441	69.2	9,511,573	4,087,000	5,627,504	3,690,654
Western Pacific	Sept.	1,195	3,456,743	146,837	3,689,650	453,854	511,664	120,991	1,301,138	2,551,994	69.2	1,137,656	328,416	691,955	720,303
	9 mos.	1,195	25,672,919	1,666,306	28,172,991	4,774,544	4,439,242	1,103,790	10,770,162	22,535,066	80.0	5,637,925	2,154,746	2,693,326	3,258,489
Wheeling & Lake Erie	Sept.	505	2,532,903	.....	2,675,693	396,894	448,706	59,335	880,065	1,853,477	69.3	822,216	481,538	471,066	301,369
	9 mos.	505	20,867,174	13	21,805,592	2,787,956	3,344,202	489,847	6,901,685	14,081,358	64.6	7,724,234	4,360,322	4,825,739	2,373,570
Wisconsin Central	Sept.	1,051	2,102,952	48,879	2,296,588	287,833	319,257	52,491	941,099	1,677,768	73.1	618,820	303,161	373,578	478,204
	9 mos.	1,051	17,740,894	454,944	19,482,548	2,195,291	2,764,339	443,846	7,876,330	13,935,480	71.5	5,547,068	1,823,231	2,723,248	1,853,409



INDIA Buys *Steam Locomotives*

THE
SUPERHEATER
COMPANY
Representative of AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave., CHICAGO
Montreal, Canada, THE SUPERHEATER COMPANY, LTD.

The sixteen Pacific type locomotives being built in this country for the railways of INDIA, will all be equipped with the Elesco superheater.

The Elesco Superheater is the world's superheater standard. Keep abreast of superheater development with Elesco.

A-1895

Superheaters • Superheater Pyrometers • Exhaust Steam Injectors • Steam Dryers • Feedwater Heaters • Steam Generators • Oil Separators • American Throttles

PICK A NUMBER FROM 1 TO 44

GM Switchers Roll up Huge Scores

Check the performance records of General Motors Diesel switchers on any railroad — you'll find work-hour and availability averages consistently high whether the road operates one switcher or a large fleet.

Shown here are reports on the performance of 58 GM Diesel switchers in operation on four different railroads, East and West.

One General Motors switcher on the Houston Belt & Terminal has worked an average of 726 hours per month for seven years with average availability of 97%; 44 units on the Rock Island have accumulated a total of nearly three million hours with an availability score of 94.9%. Taken as a group, these 58 locomotives have accounted for 3,580,730 hours of work with average availability of 94.7% throughout 5,553 locomotive months of service.

These figures tell a story of dependable, low-cost operation backed by Electro-Motive's undivided design and manufacturing responsibility and nation-wide service — unmatched in the motive power industry.

GENERAL MOTORS LOCOMOTIVES

ELECTRO-MOTIVE DIVISION

GENERAL MOTORS LA GRANGE, ILL.

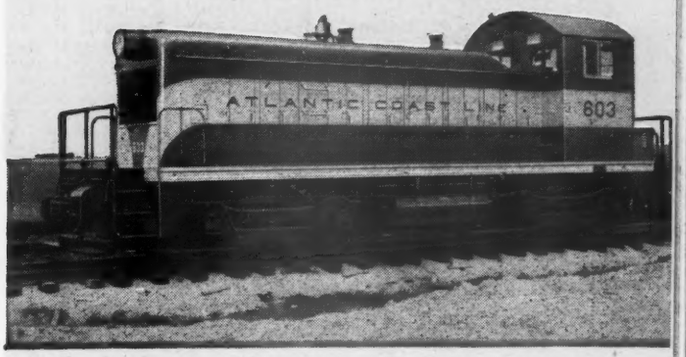
HOUSTON BELT & TERMINAL

1 600 H.P. General Motors Diesel switcher, operating from March 1940 to June 30, 1947, has worked a total of 63,860 hours, an average of

726 HOURS PER MONTH

AVERAGE AVAILABILITY — 97.0%

ATLANTIC COAST LINE

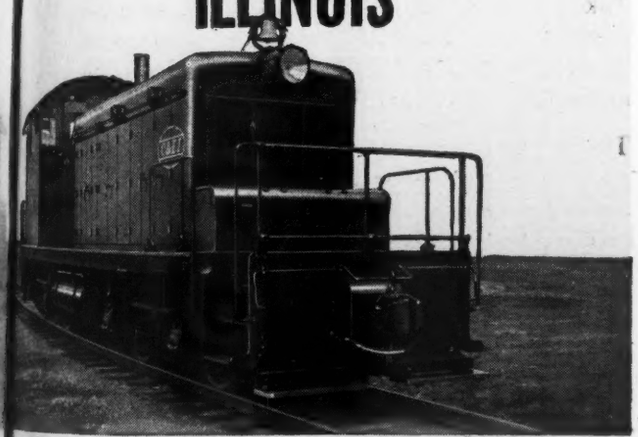


6 1000 H.P. General Motors Diesel switchers, from January 1940 through June 30, 1947, worked a total of 258,677 hours. This is an average of —

674 HOURS PER MONTH

AVERAGE AVAILABILITY — 93.1%

CHICAGO & EASTERN ILLINOIS



7 600 H.P. General Motors Diesel switchers, in operation from January 1942 through April 30, 1947, worked a total of 334,851 hours. During this period these locomotives averaged —

634 HOURS PER MONTH

AVERAGE AVAILABILITY — 94.6%

CHICAGO, ROCK ISLAND & PACIFIC

44 General Motors Diesel switchers (600 and 900 H.P.) during the ten-year period from May 1937 to June 30, 1947, totaled 2,923,342 hours. They attained an average per locomotive of —

642 HOURS PER MONTH

AVERAGE AVAILABILITY — 95.3%

Freight Operating Statistics of Large Steam Railways—Selected

	Region, road, and year		Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New Eng. Region	Boston & Albany	1947	362	145,036	159,051	23,259	3,363	63.6	220,622	92,521	64	2	26	28.3
		1946	362	148,884	165,830	26,578	3,526	64.2	222,002	88,664	62	..	26	29.5
	Boston & Maine	1947	1,750	314,142	321,570	11,567	11,722	74.0	703,260	312,237	95	2	18	15.7
		1946	1,750	330,187	338,839	12,142	12,103	71.2	735,839	320,411	104	18	17	12.2
	N. Y., New H. & Hartf*	1947	1,820	346,486	542,769	42,489	13,564	72.6	795,358	357,026	193	4	30	18.7
		1946	1,820	400,596	547,813	44,355	15,840	70.6	926,175	399,507	205	10	52	23.0
Great Lakes Region	Delaware & Hudson	1947	794	278,981	336,897	31,332	12,321	70.8	859,983	465,964	126	37	21	11.4
		1946	846	299,994	363,947	35,658	12,765	67.5	918,323	491,334	119	65	21	10.2
	Del., Lack. & Western	1947	970	331,050	376,587	44,356	14,209	71.9	936,303	446,278	108	19	14	9.9
		1946	971	331,087	377,126	44,064	14,175	70.6	914,839	418,894	113	28	30	17.5
	Erie	1947	2,229	792,857	846,719	64,500	38,683	67.1	2,547,416	1,079,245	269	20	79	21.5
		1946	2,242	826,584	882,941	75,448	40,552	65.4	2,671,444	1,118,206	286	35	67	17.3
	Grand Trunk Western	1947	972	317,792	324,392	2,811	10,008	64.9	672,005	299,005	65	..	9	12.2
		1946	972	290,243	298,757	2,637	9,927	67.0	629,596	268,309	69	..	7	9.2
	Lehigh Valley	1947	1,239	330,462	367,429	62,234	14,692	71.8	989,629	500,122	97	10	61	36.3
		1946	1,242	322,052	358,247	60,330	14,994	72.3	992,292	496,333	118	18	33	19.5
	New York Central	1947	10,338	3,284,942	3,504,888	225,639	120,877	65.9	8,175,480	3,841,691	1,010	42	347	24.8
		1946	10,328	3,367,932	3,595,263	234,439	128,485	63.8	8,712,735	3,971,106	1,029	44	321	23.0
	New York, Chi. & St. L.	1947	1,656	663,384	671,144	9,052	26,751	69.2	1,715,188	763,535	145	2	19	11.4
		1946	1,656	631,928	638,313	7,990	26,450	69.0	1,672,008	733,868	142	5	33	18.3
	Pitts. & Lake Erie	1947	223	101,583	103,327	56	4,247	68.6	347,298	206,725	30	1	16	34.0
		1946	229	99,670	100,690	102	4,085	67.9	336,299	199,560	35	4	14	26.4
	Wabash	1947	2,381	671,218	693,979	15,828	23,845	72.1	1,514,580	682,763	158	7	39	19.1
		1946	2,381	665,467	687,747	18,269	24,061	72.5	1,498,699	669,078	162	9	37	17.8
Central Eastern Region	Baltimore & Ohio	1947	6,100	2,087,720	2,627,921	307,274	74,323	65.9	5,386,376	2,726,298	842	10	312	26.8
		1946	6,103	2,161,644	2,673,651	296,350	75,613	65.3	5,456,368	2,723,837	829	7	315	27.4
	Central of New Jersey*	1947	418	84,972	89,839	9,668	3,354	64.6	248,977	129,587	43	..	22	33.8
		1946	419	100,816	113,061	33,563	4,360	69.4	280,290	146,060	49	2	27	34.6
	Central of Pennsylvania	1947	213	82,328	94,937	18,945	3,255	69.3	239,232	125,887	42	3	17	27.4
		1946	230	74,582	87,485	17,938	2,751	67.0	202,063	108,534	43	2	25	35.7
	Chicago & Eastern Ill.	1947	910	176,752	177,610	3,435	5,356	71.6	348,392	172,824	56	..	17	23.3
		1946	910	197,226	199,108	4,209	5,778	69.1	387,169	191,328	57	1	20	25.6
	Elgin, Joliet & Eastern	1947	391	122,742	127,866	4,151	3,856	70.0	290,458	160,702	47	8	6	9.8
		1946	391	120,869	125,957	3,686	3,778	67.1	287,580	154,034	46	2	16	25.0
	Pennsylvania System	1947	10,031	3,917,304	4,445,382	608,994	159,774	68.8	11,139,994	5,693,981	1,900	37	275	12.4
		1946	10,033	4,310,516	5,011,143	660,409	171,288	65.9	12,048,989	5,997,933	1,960	1	263	11.8
	Reading	1947	1,356	447,874	503,474	69,711	17,262	67.7	1,300,886	726,474	221	34	33	11.5
		1946	1,361	541,521	601,470	69,414	18,491	66.6	1,405,329	778,004	253	23	50	15.3
	Western Maryland	1947	837	239,267	291,018	40,656	8,352	62.8	702,516	392,071	164	2	8	4.6
		1946	839	222,086	266,791	39,682	7,702	64.3	641,223	362,594	144	8	10	6.2
Pocahontas Region	Chesapeake & Ohio	1947	4,979	1,792,075	1,905,436	85,575	81,156	59.2	6,801,774	3,875,525	612	7	90	12.7
		1946	4,976	1,693,555	1,793,555	82,051	76,224	58.8	6,322,952	3,541,087	591	5	91	13.2
	Norfolk & Western	1947	2,108	842,155	902,031	65,537	40,220	59.5	3,493,609	1,940,365	265	29	19	6.1
		1946	2,139	793,730	846,440	59,164	38,064	58.7	3,314,262	1,822,643	256	45	19	5.9
Southern Region	Atlantic Coast Line	1947	5,556	802,543	819,774	13,206	22,514	66.2	1,478,657	675,667	337	45	58	13.2
		1946	5,554	892,917	907,447	14,935	23,761	70.0	1,514,226	708,333	366	51	33	7.3
	Central of Georgia*	1947	1,782	287,785	292,834	5,060	6,968	73.2	447,529	217,595	94	..	12	11.3
		1946	1,783	306,381	312,577	5,926	7,604	70.0	508,403	232,703	88	..	10	10.2
	Gulf, Mobile & Ohio	1947	2,846	394,221	397,477	1,431	17,932	74.9	1,145,578	576,009	187	11	6	2.9
		1946	2,846	496,954	559,166	3,444	17,060	73.8	1,097,704	502,142	173	35	34	14.0
	Illinois Central	1947	6,581	1,502,739	1,517,638	53,257	55,382	64.8	3,818,865	1,807,464	559	24	79	11.9
		1946	6,582	1,499,177	1,511,995	56,303	58,067	67.1	3,881,771	1,841,812	591	12	93	13.4
	Louisville & Nashville	1947	4,756	1,578,783	1,708,843	47,858	40,791	65.0	2,937,362	1,541,787	406	4	82	16.7
		1946	4,750	1,557,938	1,692,898	47,425	41,305	63.9	2,963,251	1,533,761	388	19	73	15.2
	Nash., Chatt. & St. Louis	1947	1,052	288,253	305,952	8,804	6,705	76.5	418,633	202,674	89	..	20	18.3
		1946	1,053	317,656	326,604	9,099	6,892	76.3	426,442	202,857	88	..	12	12.0
	Seaboard Air Line	1947	4,145	720,736	770,289	12,350	21,302	70.2	1,388,282	647,558	272	17	55	16.0
		1946	4,139	732,545	764,269	14,150	21,689	71.2	1,377,589	634,908	249	19	68	20.2
	Southern	1947	6,451	1,734,471	1,763,756	32,309	47,077	71.0	2,946,168	1,340,077	560	37	99	14.2
		1946	6,450	2,178,143	2,218,346	37,804	50,499	70.4	3,226,010	1,483,651	612	1	102	14.3
Northwestern Region	Chi. & North Western	1947	8,061	1,133,205	1,185,422	36,124	38,538	69.6	2,537,233	1,156,140	366	..	110	23.1
		1946	8,062	1,182,617	1,229,606	32,224	39,038	67.1	2,632,975	1,112,583	365	2	140	27.6
	Chicago Great Western	1947	1,445	277,392	281,122	20,882	9,491	71.5	618,607	286,237	68	1	10	12.7
		1946	1,445	277,254	280,357	10,658	8,794	69.2	567,188	244,175	67	..	11	14.1
	Chi., Milw., St. P. & Pac.	1947	10,677	1,588,919	1,669,503	71,533	53,918	66.5	3,684,702	1,694,788	479	20	98	16.4
		1946	10,725	1,484,823	1,578,537	65,656	52,107	67.6	3,442,553	1,579,854	466	53	85	14.1
	Chi., St. P., Minneap. & Om.	1947	1,606	231,818	246,034	12,882	6,100	72.4	406,830	192,571	78	..	32	29.1
		1946	1,606	221,315	238,467	14,154	5,916	72.6	391,248	181,660	80	..	40	33.3
	Duluth, Missabe & Iron Range	1947	547	178,293	178,922	874	9,666	51.1	883,190	537,896	48	..	..	..
		1946	546	165,694	166,609	1,457	8,861	51.7	810,608	496,070	50	..	..	..
	Great Northern	1947	8,237	1,114,184	1,120,300	50,293	43,626	63.4	3,292,147	1,640,247	357	33	62	13.7
		1946	8,236	1,067,287	1,070,852	49,236	40,988	63.4	3,025,659	1,474,555	352	58	83	16.8
	Minneap., St. P. & S. St. M.	1947	4,181	463,643	476,033	10,392	13,552	66.3	919,362	437,237	118	..	11	8.5
		1946	4,181	475,503	486,473	10,029	13,803	65.4	941,921	445,032	122	..	11	8.3
	Northern Pacific	1947	6,623	953,220	1,005,632	58,461	37,851	69.0	2,577,556	1,201,563	345	31	52	12.1
		1946	6,624	942,562	1,002,011	62,904	36,250	68.6	2,461,898	1,147,409	373	20	40	9.2
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1947	13,107	3,126,309	3,330,921	160,619	116,664	69.5	7,757,890	3,306,139	786	54	112	11.8
		1946	13,085	2,977,068	3,157,783	179,273	112,907	72.0	7,041,469	2,908,447	750	59	147	15.4
	Chi. Burl. & Quincy	1947	8,663	1,531,276	1,583,811	70,638	58,506	64.3	4,164,959	1,948,274	418	4	68	13.9
		1946	8,671	1,437,739	1,491,297	52,965	53,965	63.0	3,786,177	1,711,551	443	39	72	13.0
	Chi. Rock I. & Pac.*	1947	7,623	1,329,450	1,370,781	13,415	42,263	67.0	2,867,709	1,339,224	296	22	85	21.1
		1946	7,615	1,314,086	1,344,299	19,149	40,657	65.0	2,731,046	1,216,985	333	15	90	20.5
	Denver & R. G. Wn.	1947	2,467	444,188	494,873	65,842	14,328	75.9	952,938	466,695	185	27	31	12.8
		1946	2,491	456,938	507,621	68,038	13,136	72.7	893,757	413,816	179	17	38	16.2
	Southern Pacific Company	1947	8,159	2,275,148	2,562,956	501,630	91,727	68.0	6,081,322	2,518,036	811	2	159	16.4
		1946	8,171	2,427,389	2,733,605	462,905	96,910	70.3	6,245,149	2,598,571	792	1	184	18.8
	Union Pacific	1947	9,779	2,912,375	3,065,550	242,500	111,801	64.8	7,708,999	3,231,517	705	48	87	10.4
		1946	9,775	3,016,292	3,149,865	234,706	110,328	65.5	7,283,306	2,980,891	715	65	110	12.4
	Western Pacific	1947	1,192	265,811	303,980	26,896	12,121	80.4	747,261	369,307	81	35	20	14.7
		1946	1,192	280,077	307,954	33,871	12,223	78.0	745,543	351,697	97	21	15	11.3
Southwestern Region	International-Great Northern*	1947	1,110	245,968	248,971	1,202	6,577	70.2	450,712	221,176	62	..	13	17.3
		1946	1,110	215,820	217,960	721	5,560	70.6	360,130	172,019	63	..	13	17.1
	Kansas City Southern	1947	885	219,374	225,468	2,614	9,844	65.5	673,665	315,835	52	2	12	18.2
		1946	885	229,691	269,344	4,821	9,208	67.6	629,405	303,470	62	..	9	12.7
	Mo.-Kans.-Texas Lines	1947	3,241	549,976	567,481	8,086	17,291	66.0	1,146,750	521,968	120	..	35	22.6
		1946	3,241	540,057	551,588	9,869	15,674	68.2	995,779	440,873	123	..	43	25.9
	Missouri Pacific*	1947	6,985	1,617,675	1,693,094	27,737	52,609	66.8	3,603,676	1,663,471	428	3	57	11.7
		1946	7,053	1,466,585	1,527,272	38,727	48,180	67.5	3,234,911	1,455,519	424	5	75	14.9
	Texas & Pacific	1947	1,851	507,215	507,215	16,490	16,693	60.5	1,185,124	502,275	113	9	13	9.6
		1946	1,871	369,095	369,095	6,558	11,579	64.8	786,821	323,557	105	46	5	3.2
	St. Louis-San Francisco	1947	4,615	1,005,724	1,038,870	12,567	24,819	64.8	1,722,223	762,441	295	18	31	9.0
		1946	4,615	1,006,159	1,052,784	11,503	24,471	66.9	1,626,141	736,839	307	3	80	8.8
	St. Louis Southw. Lines	1947	1,568	357,238	357,903	4,879	13,659	75.1	856,469	382,854	81	11	13	12.4
		1946	1,568	346,041	348,919	4,891	13,951	81.1	799,450	357,366	85	27	24	17.6
	Texas & New Orleans	1947	4,318	953,880	954,144	20,455	26,479	70.5	1,736,107	781,379	216		39	15.3
		1946	4,321	961,684	962,154	15,875	26,093	72.5	1,677,436	760,551	218	1	42	16.1

* Report of trustee or trustees.

Items for the Month of August 1947 Compared with August 1946

Region, road, and year		Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl.locos. and tenders	G.t.m. per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New Eng. Region														
Boston & Albany	1947	210	5,026	5,236	0.4	23,518	1,526	640	27.5	585	33.4	8,245	169	73.0
	1946	314	5,057	5,371	0.7	22,334	1,495	597	25.1	517	32.0	7,901	184	78.7
Boston & Maine	1947	1,369	10,297	11,666	3.0	33,541	2,243	996	26.6	839	42.5	5,756	102	101.7
	1946	1,811	11,200	13,011	3.1	32,423	2,233	972	26.5	755	40.1	5,906	104	88.2
N. Y., New H. & Hartf*	1947	1,382	18,527	19,909	2.0	31,703	2,302	1,033	26.3	579	30.3	6,328	86	83.3
	1946	1,826	17,494	19,320	3.0	31,212	2,318	1,000	25.2	615	34.6	7,081	92	77.5
Great Lakes Region														
Delaware & Hudson	1947	1,989	7,798	9,787	4.9	54,800	3,099	1,679	37.8	1,575	58.9	18,931	97	67.3
	1946	2,303	7,231	9,534	2.7	51,824	3,078	1,647	38.5	1,691	65.0	18,735	101	65.8
Del., Lack. & Western	1947	3,955	13,502	17,457	3.9	41,835	2,880	1,373	31.4	847	37.5	14,841	104	107.6
	1946	4,073	12,600	16,673	4.2	42,281	2,807	1,285	29.6	768	36.8	13,916	108	88.3
Erie	1947	5,489	25,643	31,132	4.0	52,388	3,235	1,371	27.9	1,140	60.8	15,619	92	86.7
	1946	6,463	30,638	37,101	2.1	52,315	3,257	1,363	27.6	994	55.1	16,089	92	87.3
Grand Trunk Western	1947	4,112	10,792	14,904	7.7	41,459	2,137	951	29.9	684	35.3	9,923	86	153.2
	1946	3,963	10,152	14,115	6.9	42,731	2,184	931	27.0	621	34.3	8,904	84	137.8
Lehigh Valley	1947	5,708	15,894	21,602	6.9	54,022	3,073	1,553	34.0	794	32.5	13,021	96	86.3
	1946	5,642	13,663	19,305	4.7	51,917	3,195	1,598	33.1	831	34.8	12,891	100	84.4
New York Central	1947	42,765	102,816	145,581	3.5	39,727	2,523	1,186	31.8	858	41.0	11,987	103	97.0
	1946	44,185	105,809	149,994	4.5	40,469	2,623	1,195	30.9	854	43.3	12,403	96	99.4
New York, Chi. & St. L.	1947	1,994	14,662	16,656	1.4	50,438	2,596	1,156	28.5	1,511	76.5	14,873	82	142.8
	1946	2,229	13,102	15,331	2.4	50,578	2,664	1,169	27.7	1,513	79.1	14,295	80	124.9
Pitts. & Lake Erie	1947	3,029	9,916	12,945	6.9	52,565	3,435	2,045	48.7	490	14.7	29,904	97	75.4
	1946	2,184	9,284	11,468	4.2	52,156	3,379	2,005	48.9	563	17.0	28,111	92	66.5
Wabash	1947	5,490	16,158	21,648	4.3	44,679	2,281	1,028	28.6	1,045	50.7	9,250	101	117.6
	1946	5,292	15,337	20,629	3.3	43,750	2,278	1,017	27.8	1,031	51.2	9,065	104	115.3
Central Eastern Region														
Baltimore & Ohio	1947	37,101	49,401	86,502	5.1	32,642	2,640	1,336	36.7	1,002	41.5	14,417	141	84.3
	1946	37,576	52,885	90,461	5.1	31,783	2,580	1,288	36.0	962	40.9	14,397	142	85.8
Central of New Jersey*	1947	603	10,349	10,952	3.3	32,546	3,024	1,574	38.6	381	15.3	10,001	121	69.3
	1946	1,283	9,351	10,634	5.1	34,849	2,888	1,505	33.5	357	15.4	11,245	133	56.9
Central of Pennsylvania	1947	893	4,291	5,184	8.7	40,059	3,052	1,606	38.7	814	30.4	19,065	110	71.0
	1946	1,234	4,253	5,487	7.6	28,965	2,755	1,480	39.5	638	24.1	15,222	135	54.7
Chicago & Eastern Ill.	1947	1,476	4,582	6,058	5.6	34,412	1,982	983	32.3	915	39.6	6,126	111	83.2
	1946	1,783	4,290	6,073	6.8	34,562	2,004	990	33.1	999	43.7	6,782	111	88.1
Elgin, Joliet & Eastern	1947	5,763	9,406	15,169	2.7	18,574	2,529	1,399	41.7	335	11.5	13,258	115	103.3
	1946	7,426	8,552	15,978	1.8	19,892	2,531	1,355	40.8	303	11.1	12,708	128	93.5
Pennsylvania System	1947	116,356	138,104	254,460	10.2	37,952	2,943	1,504	35.6	735	30.0	18,311	116	79.5
	1946	115,528	131,492	247,020	8.6	36,884	2,894	1,441	35.0	775	33.6	19,285	119	89.3
Reading	1947	8,046	24,184	32,230	3.3	35,665	2,908	1,624	42.1	729	25.6	17,282	97	76.1
	1946	8,812	24,362	33,174	2.5	33,551	2,604	1,442	42.1	768	27.4	18,440	99	77.2
Western Maryland	1947	2,403	6,332	8,735	1.0	30,451	2,983	1,665	46.9	1,410	47.8	15,110	143	67.0
	1946	2,271	6,144	8,415	1.0	30,855	2,939	1,662	47.1	1,491	49.2	13,941	152	65.6
Pocahontas Region														
Chesapeake & Ohio	1947	44,419	32,926	77,345	1.5	58,708	3,850	2,194	47.8	1,613	57.1	25,109	72	97.4
	1946	42,562	33,695	76,257	2.0	54,691	3,795	2,125	46.5	1,459	53.4	22,955	74	95.5
Norfolk & Western	1947	26,289	8,191	34,480	2.5	67,569	4,213	2,340	48.2	1,777	61.9	29,693	84	105.4
	1946	23,595	7,783	31,378	.8	65,039	4,226	2,324	47.9	1,813	64.5	27,487	82	97.3
Southern Region														
Atlantic Coast Line	1947	7,674	17,127	24,801	5.2	28,845	1,846	843	30.0	871	43.8	3,923	115	65.5
	1946	8,096	18,045	26,141	3.0	26,925	1,705	797	29.8	846	40.5	4,114	116	70.9
Central of Georgia*	1947	1,482	5,327	6,809	4.5	28,456	1,559	758	31.2	987	43.2	3,939	137	95.1
	1946	1,472	6,235	7,707	1.2	29,789	1,664	762	30.6	941	43.9	4,210	129	113.3
Gulf, Mobile & Ohio	1947	2,535	12,754	15,289	1.4	52,336	2,908	1,462	32.1	1,230	51.1	6,529	49	65.3
	1946	2,964	12,527	15,491	1.4	36,342	2,222	1,017	29.4	1,051	48.4	5,692	100	81.1
Illinois Central	1947	13,104	37,504	50,608	1.5	44,190	2,602	1,232	32.6	1,152	54.4	8,860	114	81.0
	1946	15,961	36,982	52,943	1.1	44,010	2,653	1,259	31.7	1,141	53.7	9,027	113	77.6
Louisville & Nashville	1947	23,429	16,472	39,901	4.4	29,278	1,861	977	37.8	1,248	50.9	10,457	115	122.9
	1946	23,986	15,974	39,960	3.9	29,589	1,902	984	37.1	1,163	49.0	10,416	117	121.1
Nash., Chatt. & St. Louis	1947	1,023	5,280	6,303	7.3	28,254	1,462	708	30.2	1,032	44.6	6,215	123	99.4
	1946	1,028	5,384	6,412	3.4	25,239	1,346	640	29.4	1,012	45.0	6,214	136	112.2
Seaboard Air Line	1947	5,704	15,297	21,001	1.6	33,909	1,963	916	30.4	988	46.3	5,040	115	82.4
	1946	5,441	17,193	22,634	2.0	32,356	1,916	883	29.3	916	43.9	4,948	119	83.8
Southern	1947	12,390	28,672	41,062	4.8	28,731	1,722	783	28.5	1,020	50.5	6,701	125	89.1
	1946	13,933	34,417	48,350	4.2	25,124	1,503	691	29.4	983	47.5	7,420	137	106.5
Northwestern Region														
Chi. & North Western	1947	18,813	42,713	61,526	3.2	33,250	2,387	1,088	30.0	608	29.1	4,627	114	90.7
	1946	19,955	40,501	60,456	3.6	34,908	2,344	991	28.5	629	32.9	4,452	118	87.1
Chicago Great Western	1947	1,001	5,087	6,088	3.3	37,771	2,232	1,033	30.2	1,491	69.2	6,390	116	125.3
	1946	1,086	4,666	5,752	6.1	35,656	2,047	881	27.8	1,384	72.1	5,451	118	126.8
Chi., Milw., St. P. & Pac.	1947	17,845	44,998	62,843	1.7	36,497	2,341	1,077	31.4	898	43.0	5,120	109	101.7
	1946	19,828	37,870	57,698	1.8	36,996	2,342	1,075	30.3	921	44.9	4,752	112	95.5
Chi., St. P., Minneap. & Om.	1947	986	7,577	8,563	6.0	22,813	1,856	879	31.6	734	32.1	3,868	110	78.5
	1946	1,011	7,188	8,199	4.9	22,992	1,852	860	30.7	725	32.5	3,649	111	73.1
Duluth, Missabe & Iron Range	1947	14,548	521	15,069	1.7	84,775	5,133	3,126	55.6	1,154	40.6	31,721	56	141.4
	1946	13,862	416	14,278	2.2	89,068	5,037	3,083	56.0	1,116	38.6	29,308	63	123.5
Great Northern	1947	18,459	29,084	47,543	3.7	46,485	2,978	1,484	37.6	1,182	49.6	6,424	87	91.1
	1946	19,320	24,366	43,686	3.6	44,755	2,865	1,396	36.0	1,167	51.1	5,775	87	80.1
Minneap., St. P. & S. St. M.	1947	5,453	10,118	15,571	5.4	34,013	2,009	956	32.3	973	45.5	3,373	87	129.4
	1946	4,670	8,513	13,183	4.8	33,704	2,006	948	32.2	1,080	51.2	3,434	88	129.9
Northern Pacific	1947	15,303	19,856	35,159	4.3	46,330	2,721	1,268	31.7	1,092	49.9	5,852	128	87.0
	1946	15,028	19,706	34,734	3.6	42,148	2,633	1,227	31.7	1,074	49.5	5,588	127	86.8
Central Western Region														
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1947	34,591	41,038	75,629	5.7	46,945	2,498	1,064	28.3	1,356	68.9	8,137	96	124.9
	1946	38,753	44,579	83,332	4.7	45,815	2,377	982	25.8	1,121	60.4	7,170	105	118.0
Chi. Burl. & Quincy	1947	14,136	30,278	44,414	3.2	44,739	2,733	1,278	33.3	1,343	62.7	7,255	92	117.1
	1946	16,071	29,792	45,863	2.5	43,971	2,647	1,197	31.7	1,222	61.2	6,367	96	96.9
Chi. Rock I. & Pac.*	1947	7,284	25,757	33,041	4.6	37,589	2,171	1,014	31.7	1,219	57.4	5,667	97	115.9
	1946	9,100	25,138	34,238	4.4	37,441	2,092	932	29.9	1,114	57.2	5,155	97	103.4
Denver & R. G. Wn.	1947	6,525	9,495	16,020	4.2	36,221	2,162	1,059	32.6	1,008	40.8	6,102	166	79.4
	1946	6,828	8,496	15,324	5.5	32,460	1,971	912	31.5	915	40.0	5,359	160	84.3
Southern Pacific Company	1947	21,933	40,846	62,779	3.1	41,048	2,704	1,119	27.5	1,288	69.1	9,956	99	107.6
	1946	22,842	49,828	72,670	2.8	38,411	2,611	1,087	26.8	1,131	60.0	10,259	101	112.4
Union Pacific	1947	23,030	43,236	66,266	2.3	52,886	2,674	1,121	28.9	1,587	84.7	10,660	118	131.0
	1946	22,865	42,530	65,395	2.9	49,490	2,453	1,004	27.0	1,528	86.4	9,837	125	127.4
Western Pacific	1947	2,077	3,527	5,604	4.5	55,006	2,826	1,397	30.5	2,155	87.9	9,994	60	81.6
	1946	2,401	3,861	6,262	12.1	51,275	2,676	1,262	28.8	1,916	85.4	9,518	63	85.2
Southwestern Region														
International-Great Northern*	1947	303	6,727	7,030	1.3	34,091	1,857	911	33.6	1,026	43.5	6,428	102	114.6
	1946	310	6,142	6,452	1.5	30,995	1,686	805	30.9	823	37.7	4,999	107	93.0
Kansas City Southern	1947	1,010	6,155	7,165	3.8	58,897	3,083	1,445	32.1	1,388	66.0	11,512	101	119.5
	1946	998	6,223	7,221	3.2	45,959	2,761	1,331	33.0	1,385	62.2	11,061	98	135.3
Mo.-Kans.-Texas Lines	1947	1,398	9,481	10,879	.9	38,150	2,101	956	30.2	1,509	75.7	5,195	87	123.4
	1946	1,713	8,994	10,707	.8	34,629	1,853	820	28.1	1,356	70.6	4,388	78	114.6
Missouri Pacific*	1947	14,988	24,929	39,917	1.9	39,456	2,241	1,034	31.6	1,263	59.8	7,682	103	118.7
	1946	14,989	30,094	45,083	1.3	38,349	2,219	998	30.2	1,067	52.3	6,657	103	105.7
Texas & Pacific	1947	1,102	9,271	10,373	2.0	42,675	2,373	1,006	30.1	1,610	88.5	8,753	88	132.9
	1946	1,232	6,922	8,154	2.5	43,502	2,155	886	27.9	1,331	73.5	5,578	87	82.7
St. Louis-San Francisco	1947	3,778	16,084	19,862	2.0	33,708	1,718	761	30.7	1,191	59.9	5,329	116	107.9
	1946	3,941	15,451	19,392	1.9	32,247	1,624	736	30.1	1,199	59.5	5,150	121	106.4
St. Louis Southw. Lines	1947	1,050	5,823	6,873	2.7	47,797	2,401	1,073	28.0	1,854	88.1	7,876	72	116.9
	1946	1,119	5,471	6,590	3.9	45,022	2,314	1,034	25.6	1,788	86.1	7,352	76	92.2
Texas & New Orleans	1947	2,973	16,318	19,291	2.6	36,103	1,839	828	29.5	1,304	62.7	5,837	84	129.7
	1946	3,233	16,559	19,792	3.8	33,368	1,758	797	29.1	1,231	58.2	5,678	86	125.0

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

GENERAL NEWS

(*Continued from page 53*)

Seaboard "Silver Star" Begins Service on December 12

The Seaboard Air Line's new streamlined train going into service on December 12 between New York and both coasts of Florida will be named the "Silver Star," it has been announced by C. E. Bell, passenger traffic manager. The name, and a 50-word composition telling why it was considered the most appropriate for the new streamliner, were submitted by Mrs. Harry Jordan, St. Petersburg, Fla., whose entry was one of 30,000 suggestions in the $500-prize contest conducted by the railroad.

Covering the same route as the "Silver Meteor," which leaves New York each afternoon, the "Silver Star" will consist of stainless steel coaches (all seats reserved at no additional cost), dining cars, tavern coach, observation lounge coach and conventional Pullman cars with section, bedroom, compartment and drawing room accommodations. The southbound schedule calls for departure from New York at 10:05 a. m. and arrival in Miami at 11:50 the next morning. Northbound, the train will leave Miami at 5:35 p. m. and arrive in New York at 6:15 p. m. on the following day.

Faricy Lists A.A.R. Research

More research projects are now being carried on by the Association of American Railroads than at any other time, President William T. Faricy reported to that organization's board of directors at its meeting in Chicago November 20, held in advance of the member-road meeting there. These projects, Mr. Faricy said, deal with practically every phase of railroads and railroading, and have as their objective the improvement of railroad operations, service, efficiency, economy and safety.

During the past year, Mr. Faricy stated, A. A. R. research activities have ranged from such things as the determination of the cost of stopping a train to the counterbalancing of locomotives for high-speed service. These activities, he added, were conducted not only by A. A. R. personnel, but also by some 200 technical committees working with the engineering and mechanical research forces of the organization.

Among the numerous studies made by the A. A. R., Mr. Faricy continued were those pertaining to radio communication, radar and electronics, centralized traffic control, hot box alarm devices, lightweight freight cars, refrigerator cars and motive power. During 1947, he reported, the Railroad Committee for the Study of Transportation completed its five-year survey of the postwar economic and transportation situation. The committee, he said, issued a total of 160 reports.

"These reports," Mr. Faricy explained, "constitute by far the most comprehensive survey of railroad problems and activities that has ever been undertaken. The work of this committee amply and eloquently demonstrates that the railroad industry is alert to its obligations and opportunities."

Mr. Faricy declared that during 1948 the A. A. R. will carry on research "with greater vigor, in more directions, on a broader front and with more promising possibilities than ever before." For instance, he pointed out, the Engineering Division will carry on more than 60 projects to improve track and structures; the Signal Section will work on more than 90 projects to make railroad signaling more efficient and economical; the Communications Section will progress more than 100 projects dealing with improved practices and developments in its field, and the Mechanical Division has more than 60 subjects assigned to it concerning improvements in locomotives and cars.

According to Mr. Faricy, special steps will be taken to reduce loss and damage to freight in transit, and these will include the development of better containers and freight claim prevention work among shippers and handlers of freight.

Disapproves P.R.R. Plan to Dispose of Truck Rights

Division 4 of the Interstate Commerce Commission, in a recent report, disapproved a plan whereby trucking affiliates of the Pennsylvania proposed to take the "first step" in the establishment of the road's new policy of withdrawing from so-called all-motor services and confining its highway operations, "with certain minor exceptions," to those which are auxiliary to or supplemental of rail service. The division's adverse ruling, however, was based, not on any disapproval of the policy but on a finding that the specific transactions involved in the proposed "first step" would not be consistent with the public interest.

The transactions contemplated the sale by Alko Express Lines, subsidiary of the P. R. R.'s Pennsylvania Motor Truck Lines of certain of its operating rights to Motor Freight Express. Involved in the sale would be so-called "overhead" rights on routes between Harrisburg, Pa., Chambersburg, and Pittsburgh, where Alko would also retain rights restricted against handling shipments between those three cities. Meanwhile, Alko's stock would be sold by Pennsylvania Truck Lines to persons not affiliated with the P. R. R.

The division objected to the transactions because they would involve a "split" of Alko's rights in the Harrisburg-Chambersburg-Pittsburgh territory "in a manner which we frequently have found may not properly be authorized." Also, it was stated that Motor Freight would be able to offer a new single-line service between Pittsburgh and such points on its present routes as New York, Philadelphia, Pa., Wilmington, Del., Baltimore, Md., and Washington, D. C., but the applicants "made no attempt to show that the existing services between such points are inadequate."

The P. R. R.'s decision to dispose of Alko was based on the fact that Pennsylvania Truck Lines operates in the same general territory, its services there being "primarily limited to the transportation of rail traffic moving on railroad bills of lading." Although Alko's interstate service is limited to points on the railroad, it performs a substantial amount of all-motor common carrier service for the general public. Under its new policy, as the report put it, the railroad "does not desire to continue the two types of service."

Before passing on the proposed transactions, the report had rejected protestant contentions that Motor Freight is affiliated with the P. R. R. Those contentions were based on evidence that American Contract & Trust Co., a P. R. R. subsidiary, owns 30 per cent of the capital stock of Motor Freight's parent corporation, the Baltimore Transfer Company, which in turn is controlled by the Merchants Terminal Corporation. Virtually all of the latter's common stock is owned by the Hoffberger family, including estates of deceased members thereof. It was also shown, however, that Transfer and Motor Freight each had eight directors of which three in each case were P. R. R. officers—Fred Carpi, assistant general traffic manager, J. L. Webb, manager of stations and motor service, and C. J. Henry, superintendent of the Maryland division. Merchants Terminal and Motor Freight perform no service for the railroad, but Transfer performs local pick-up and delivery service at Baltimore and substituted freight service between certain points in Maryland and Delaware.

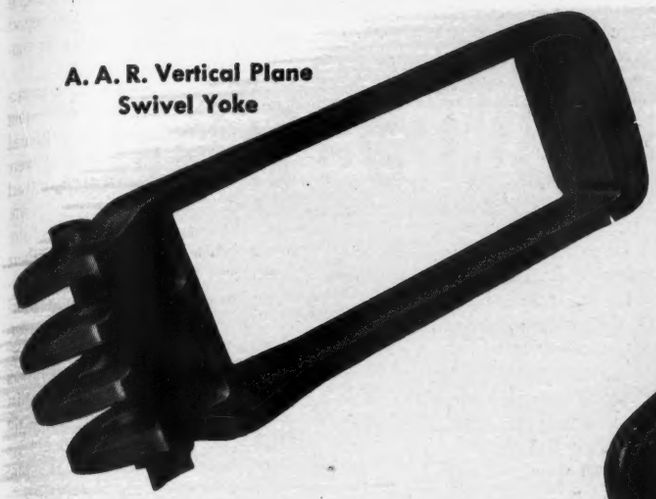
"The evidence," the report said, "shows that Motor Freight is controlled by Merchants Terminal and, through the latter by members of the Hoffberger family. None of the administrative officers or employees of Motor Freight is selected by or connected with the railroad. Motor Freight is managed and operated without regard to the interests of the railroad, and on a number of occasions in the last few years the railroad and its subsidiaries have actively opposed applications of Motor Freight before this commission and before the Pennsylvania commission for extensions of its operations. Upon the evidence, we conclude that Motor Freight is not affiliated with the railroad."

Truman Would Keep Power to Allocate Rail Facilities

Continuation of his authority to allocate "the use of transportation equipment and facilities by rail carriers" was included by President Truman among the measures he recommended this week in his message to Congress which has returned for the session he called to deal with the foreign-aid program and domestic price increases. The transport-allocation powers, which have been delegated by the President to the Office of Defense Transportation, are now scheduled to expire February 29, 1948.

The President also recommended legislation to authorize "the allocation of scarce commodities which basically affect the cost of living, or basically affect industrial production." He called, too, for legislation authorizing price controls on commodities in the same categories, and wage controls to be exercised in cases where increases would "make it impossible to maintain the price ceilings." Of his proposed controls program, the President said that it contemplated "selective treatment of a relatively few danger spots," which, he added, "is very different from overall wartime price controls."

A. A. R. Vertical Plane
Swivel Yoke



A. A. R. Vertical Plane
Horizontal Key Yoke

"Brass Tack" Points

about NATIONAL yokes

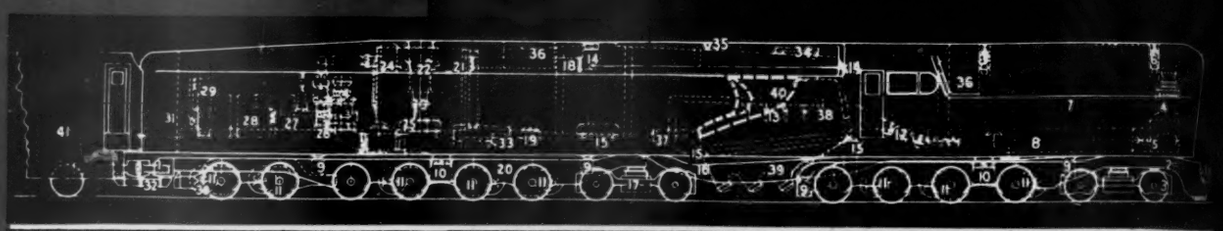
Coupled, these "brass tack" points give you complete satisfaction with National Cast Steel Yokes.

ESTAB. 1868

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY

CLEVELAND, OHIO

C & O STEAM TURBINE ELECTRICS

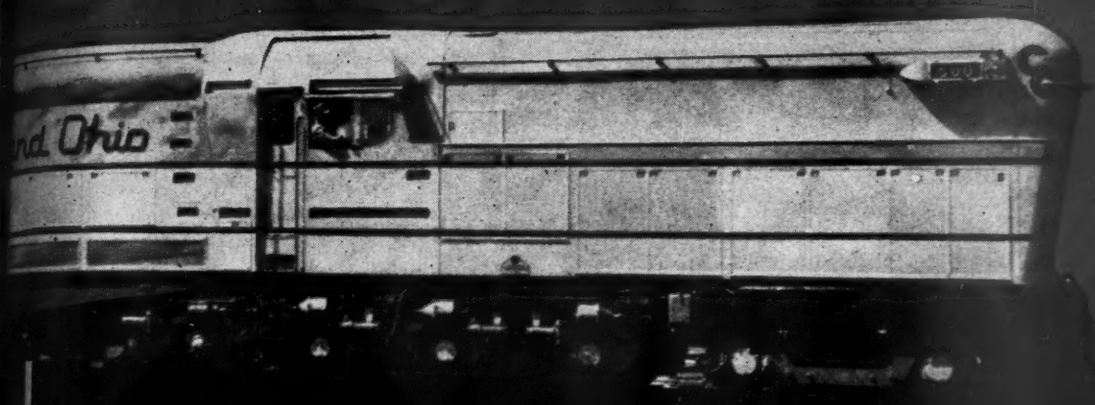


Above:
6000 hp. steam turbine electric locomotive. The coal tender is in nose, and the boiler has been reversed from conventional, with firebox in front.

At Right:
Inside the firebox (conventional radial stayed boiler) three Thermic Syphons add 128 sq. ft. to the normal firebox heating surface.

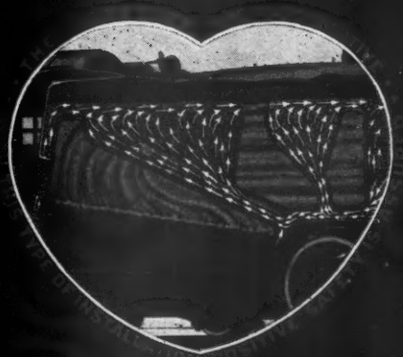
NICHOLSON THERMIC SYPHONS ARE A PRODUCT OF

SYPHON LOCOMOTIVES ARE BETTER



CHESAPEAKE & OHIO STEAM TURBINE ELECTRIC LOCOMOTIVE, first in America, three of which will handle fast daylight runs between Washington and Cincinnati. They are built for 100 miles per hour with twelve modern passenger cars.

- MORE HEATING SURFACE
- MORE BOILER WATER CIRCULATION
- MORE ECONOMY IN FUEL AND MAINTENANCE
- MORE BOILER HORSEPOWER
- **MORE LOCOMOTIVE!**
- COMPLETE PROTECTION FROM BOILER EXPLOSION



Locomotive Firebox Company

CHICAGO

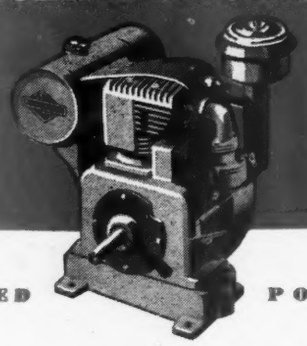
PHILADELPHIA MONTREAL

4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES

RECOGNIZED THE WORLD OVER FOR

ADVANCED ENGINEERING

IN AIR-COOLED GASOLINE ENGINES



AIR-COOLED POWER • • •

The trade-mark on a Briggs & Stratton engine is recognized as a *seal of proved performance.* Every step in the manufacture of Briggs & Stratton engines is based on the experience and technical knowledge gained during the 28 years of *continuous production.* Advanced engineering and refinements keep Briggs & Stratton out in front . . . years ahead . . . in every phase of engine building — as evidenced by the record established by more than 3 MILLION of them in operation in all parts of the world.

Preferred Power
FOR INDUSTRIAL CONSTRUCTION RAILROAD AND FARM EQUIPMENT

BRIGGS & STRATTON CORPORATION
Milwaukee 1, Wisconsin, U. S. A.

Current Publications

Pamphlets

By Narrow Gage to Bay Ridge and Coney Island; the old New York & Manhattan Beach. 12 pages. Published by the Railroadiana Library, Lackawanna Terminal, Hoboken, N. J. Price, 25 cents.

This is a short history of steam railroad rapid transit in Brooklyn, N. Y., at the turn of the century. The various railroads built to serve the area are described. Other chapters discuss the Long Island Railroad influence, heyday of the excursion traffic, the grade crossing elimination program, and absorption by the Long Island.

Freight Commodity Statistics, Class 1 Steam Railways in the United States, Year Ended December 31, 1946, prepared by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission, 147 pages. For sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Price $1.

Includes statistics on the number of tons and number of carloads of freight originated and terminated, total freight traffic, and freight revenue, by commodities, for the country as a whole, and for individual railroads.

Directory of Labor Unions in the United States. Published as Bulletin No. 901, Bureau of Labor Statistics, United States Department of Labor, Washington, D. C. Available from the Government Printing Office, Washington 25, D. C. Price, 10 cents.

This directory lists the addresses and principal officers of the American Federation of Labor and the Congress of Industrial Organizations, and of their affiliated unions and organizations. It also includes all national and international unions not affiliated with either the AFL or the CIO which have come to the attention of the Department of Labor. Included also are lists of state federations of labor affiliated with the AFL, state industrial union councils affiliated with the CIO and union research directors.

A Program for Sustaining Employment, Second Edition, 32 pages. Published by the Chamber of Commerce of the United States, Economic Research Department, Washington 6, D. C. Single copies, 10 cents each.

Why does our economic system function better at some times than at other times? Do we know enough about this highly complicated, interdependent economic system to enable us to detect on time any signs of trouble? If the answer is Yes, do we know enough, and is the system of such a nature, that we can promptly set in motion corrective forces? What are the responsibilities of the businessman? of the worker? of the government? What specific action is called for? These are some of the questions which the Committee on Economic Policy attempts to answer in this second edition of an earlier report.